

TRES VAQUEROS WINDFARM PROJECT

Final Environmental Impact Report

SCH No. 2009032077

County File No. LP09-2005

Contra Costa County
Department of Conservation
and Development

October 2011



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209132

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CHAPTER 1

Introduction

1.1 Purpose of this Document

The California Environmental Quality Act (CEQA) and its implementing regulations (the “CEQA Guidelines”) require a lead agency to prepare and certify a Final Environmental Impact Report (FEIR) before it may approve a project for which a Draft Environmental Impact Report (DEIR) has been prepared. This document and the May 2011 Tres Vaqueros Windfarm Project DEIR (SCH No. 2009032077, County File No. LP09-2005) together constitute the FEIR for the Tres Vaqueros Windfarm Repowering Project (the Project) proposed by Tres Vaqueros Windfarms, LLC (Applicant).

On May 31, 2011, the Contra Costa County Department of Conservation & Development (DCD, the CEQA lead agency) released the DEIR on the Project for public review and comment. The DEIR is available for public review at the offices of the DCD, which are located in the County Administration Building, 651 Pine Street, 4th Floor - North Wing, Martinez, California, at public libraries located in the vicinity of the Project site, and online at: <http://www.co.contra-costa.ca.us/index.aspx?NID=869>. The DEIR describes the Project and its environmental setting; analyzes potential direct, indirect and cumulative environmental impacts related to the construction, operation, maintenance, and decommissioning; identifies impacts that could be significant; recommends mitigation measures, which, if adopted, could avoid or minimize such impacts; and identifies impacts that are expected to remain significant and unavoidable, even with the implementation of recommended mitigation measures. The DEIR also evaluates alternatives to the Project, including a No Project Alternative, as required by CEQA.

The public review and comment period on the DEIR that began May 31, 2011, and ended July 19, 2011, lasted for a period of 50 calendar days. The County Zoning Administrator held a public hearing on July 6, 2011, to accept comments on the DEIR from agencies, organizations, and individuals. The hearing was held at 3:30 p.m. in Room 107 of the McBrien Administration Building, 651 Pine Street, Martinez, California. The DCD provided notification of the public review period and the public hearing to: 1) public agencies; 2) adjacent property owners and occupants; and 3) organizations that had demonstrated particular interest in the Project. Oral comments were received at the July 6, 2011, public hearing and written comments were due by July 19, 2011. Some comments were received after the end of the comment period and were accepted. Responses to all comments are provided in Chapter 2, *Comments and Responses*.

This FEIR will be used by DCD in its consideration of the Applicant’s Land Use Permit (LUP) application for the Project. The County Planning Commission will decide whether to certify the

FEIR and approve the requested LUP at a public hearing anticipated to be held on Tuesday, October 25, 2011. Public notification will be provided in accordance with State law upon confirmation of the hearing date.

1.2 Project Overview

The Applicant operates an existing wind energy facility in southeastern Contra Costa County, California, in the Altamont Pass Wind Resource Area (APWRA). The APWRA has been designated by the State and is recognized by Contra Costa County as a Wind Resource Area because it maintains winds at a level that supports economically viable wind energy projects. The existing facility is approximately 4 miles southwest of the unincorporated community of Byron in Contra Costa County, approximately 5-6 miles south of the City of Brentwood, approximately 6 miles north of the City of Livermore, and adjacent to Los Vaqueros Reservoir and Vasco Caves Regional Preserve.

The Applicant proposes to “repower” the existing wind energy facility by decommissioning and removing 91 obsolete wind turbines and associated infrastructure (including concrete foundations, transformers, and electrical equipment), and replacing them with up to 21 new, larger and more efficient turbines. Under the Environmentally Preferred Alternative described in Chapter 2, *Comments and Responses*, of this document, up to 19 Siemens turbines would be installed, representing a net reduction of at least 72 turbines at the site. The fewer, larger and more efficient new turbines would increase energy production by approximately 38 percent above existing generation and increase the facility’s nameplate generating capacity from 29.1 megawatts (MW) to approximately 42 MW. The Project also would construct a new underground electrical collection system, construct new turbine access roads, and reclaim and restore those areas of the existing wind energy facility that no longer would be used.

1.3 Organization of the FEIR

CEQA Guidelines Section 15132 requires FEIRs to consist of the following elements:

- (a) The DEIR or a revision of the draft;
- (b) Comments and recommendations received on the DEIR either verbatim or in summary;
- (c) A list of persons, organizations, and public agencies that commented on the DEIR;
- (d) The responses of the lead agency to significant environmental points raised in the review and consultation process; and
- (e) Any other information added by the lead agency.

Printed copies of this document contain CD copies of the DEIR. Copies of this document will be provided in either printed- or CD-format to all agencies, organizations, and individuals who received copies of the DEIR. The required FEIR elements described above, with the exception of the DEIR itself, are contained in the following chapters of this document:

Chapter 1, *Introduction.*

Chapter 2, *Comments and Responses.* This chapter contains copies of the written comments received on the DEIR, “Master Responses” that have been prepared to address common issues or themes identified in a number of the written comments, and responses to the individual comments. Each comment is marked with an identifying code shown in the margin. For example, Letter A Comment 2 is coded A-2. Responses to each comment letter are presented immediately after the letter and are coded to match the letter’s individual comments. Thus, the response to Comment A-2 is also coded A-2. The agencies, organizations and individuals identified in **Table 2-1** provided comments on the DEIR.

Chapter 3, *Text Revisions.* This chapter contains text changes to the DEIR that reflect additions, corrections and clarifications resulting from the analysis conducted by DCD in preparing responses to comments on the DEIR. These changes are incorporated as part of the FEIR.

CHAPTER 2

Comments and Responses

This chapter lists the public agencies, private organizations, and individuals who provided comments on the DEIR, contains copies of written comments received, and responds to those comments. As required by CEQA, these responses to comments address significant environmental issues raised by commenters during the review period (Pub. Res. Code § 21091(d); CEQA Guidelines §§ 15088(a), 15132). The County has elected to address concerns and suggestions regarding the adequacy and accuracy of the DEIR that were raised by commenters within a reasonable timeframe after the review period closed (Pub. Res. Code § 21091(d)).

California courts have recognized the unlikelihood that any agency could craft a perfect EIR. *See, e.g., Residents Ad Hoc Stadium Committee v. Board of Trustees of the California State University and Colleges et al.*, 89 Cal.App.3d 274, 285 (1979)). Consequently, key purposes of reviewing a DEIR include checking for accuracy, detecting omissions and discovering public concerns (CEQA Guidelines §§ 15200, 15204). Where the text of the DEIR has been revised in response to a comment or concern, the revised text is included as part of the response with revisions shown using the following conventions: text changes are shown in indented paragraphs, text added to the DEIR is shown in underline, and text deleted from the DEIR is shown in ~~strikethrough~~. These text changes also appear in Chapter 3, *Revisions to the DEIR*.

A number of written comments submitted on the DEIR raised the same or similar questions. Rather than repeat responses to such comments, the County is providing a comprehensive discussion of the issues and related topics as master responses in Section 2.2. Individual, point-by-point responses to each individual comment are provided in Section 2.3 that cross-reference the master responses where appropriate. Master responses are provided for the following topics:

- Environmentally Preferred Alternative
- CEQA Issues
- Biological Resources
- Hydrology

Multiple comments received on the DEIR did not address the adequacy or accuracy of the environmental analysis or identify any other significant environmental issue requiring a response; rather, these comments were directed toward the perceived merits or demerits of the Project, provided information, or expressed an opinion without specifying why the DEIR analysis was inadequate. Contra Costa County, as the CEQA lead agency, acknowledges the receipt of these types of comments; however, limited responses are provided because they do not relate to the adequacy or accuracy of the DEIR or otherwise raise significant environmental issues.

2.1 List of Commenters

The Contra Costa County Zoning Administrator held a public hearing to accept comments on the DEIR on Wednesday, July 6, 2011; two commenters provided testimony regarding the adequacy or accuracy of the environmental analysis during the hearing, as identified below in Table 2-1 under Oral Comments. The County also received 13 comment letters on the DEIR. The agencies, organizations and individuals identified in Table 2-1 provided written comments on the DEIR.

A copy of the oral testimony and each comment letter is provided in this chapter. Each comment letter is identified by a letter of the alphabet, and individual comments are ordered sequentially. For example, the letter received by Contra Costa Water District is identified as Letter A. Comment 2 within Letter A is coded A-2. Responses to the comments from each letter are presented immediately after that comment letter.

**TABLE 2-1
COMMENTERS ON THE TRES VAQUEROS WINDFARM PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT**

Comment Letter	Commenters	Date
Oral Comments		
PH	Save Mount Diablo, Jodi L. Bailey, Ph.D., Land Conservation Manager	July 6, 2011
PH	Agricultural Natural Resources Trust of Contra Costa County, Joe Ciolek	July 6, 2011
Written Comments		
A	Contra Costa Water District, Marguerite Naillon, Special Projects Manager	July 19, 2011
B	East Bay Regional Park District, Brad Olson, Environmental Programs Manager	July 19, 2011
C	Fish and Wildlife Service, Eric Tattersall, Deputy Assistant Field Supervisor	July 19, 2011
D	California Department of Fish and Game, Carl Wilcox, Regional Manager, Bay Delta Region	July 18, 2011
E	California Department of Transportation, Gary Arnold, District Branch Chief	July 19, 2011
F	California Regional Water Quality Control Board (RWQCB), Central Region, Genevieve Sparks, Environmental Scientist	June 24, 2011
G	Gagen McCoy for Agricultural Natural Resources Trust of Contra Costa County, Martin E. Lysons	July 18, 2011
H	Save Mount Diablo, Jodi L. Bailey, Ph.D., Land Conservation Manager	July 19, 2011
I	Golden Gate, Santa Clara Valley, Ohlone and Mt. Diablo Audubon Societies (Audubon), Michael Lynes (Conservation Director, Golden Gate Audubon Society), Bob Power (Executive Director, Santa Clara Valley Audubon Society), Jimm Edgar (President, Mt. Diablo Audubon Society), and Evelyn Cormier (President, Ohlone Audubon Society)	July 19, 2011
J	California Native Plant Society, East Bay Chapter, Mark Casterman, Conservation Analyst	July 19, 2011
K	Perkins Coie for Northwind Energy, Inc., Julie Jones	July 19, 2011
L	Scott Cashen, M.S., Independent Biological Resources and Forestry Consultant	July 18, 2011
M	Tres Vaqueros LLC/Pattern Energy Group (Applicant), John F. (Rick) Greiner, CPG	July 14, 2011

2.2 Master Responses

2.2.1 Master Response on the Environmentally Preferred Alternative

2.2.1.1 Introduction

Overview

Based on analysis provided in the DEIR and input received from agencies, organizations, individuals, and the Applicant during and after the public review period, an Environmentally Preferred Alternative has emerged. This master response describes the layout and components of the Environmentally Preferred Alternative, and how it pertains to concerns raised by commenters.

Commenters

Commenters with concerns addressed by this master response are:

- Letter A, CCWD
- Letter E, Caltrans
- Letter G, Gagen McCoy for ANRT
- Letter H, Save Mt. Diablo
- Letter K, Perkins Coie for Northwind Energy, Inc.
- Letter M, Pattern Energy

2.2.1.2 Environmentally Preferred Alternative

Comment Summary

This master response responds to all or part of the following comments:

A-2	A-6	A-10	G-23	H-16
A-3	A-7	A-11	G-40	K-9
A-5	A-9	E-2	H-5	M-4

Summary of Issues Raised by Commenters

- The turbines identified in the DEIR as A-1, A-3, C-1, C-3, C-4, E-1, E-2, E-3, E-4, F-1, F-2, F-3, and F-4 should be either relocated or eliminated for cultural resource-, aesthetic-, or energy conservation-related reasons.
- There were several requests for a reduced-size Project with a smaller generating capacity either equal to the existing windfarm or less than the 42MW proposed for the Project.
- There were several requests for changes to the engineering of the proposed on-site road system and construction methods to minimize drainage impacts on downstream sources.

Response

The Environmentally Preferred Alternative is based partially on Alternative 3A, *Project without A-String*, described at DEIR pages 6-16 and 6-17. Under the Environmentally Preferred Alternative,

all original Project goals would be met, including achieving a nominal generating capacity of 42 megawatts (MWs). The Environmentally Preferred Alternative is shown as Figure 2.2.2-1.

The essential differences between the Project and the Environmentally Preferred Alternative are:

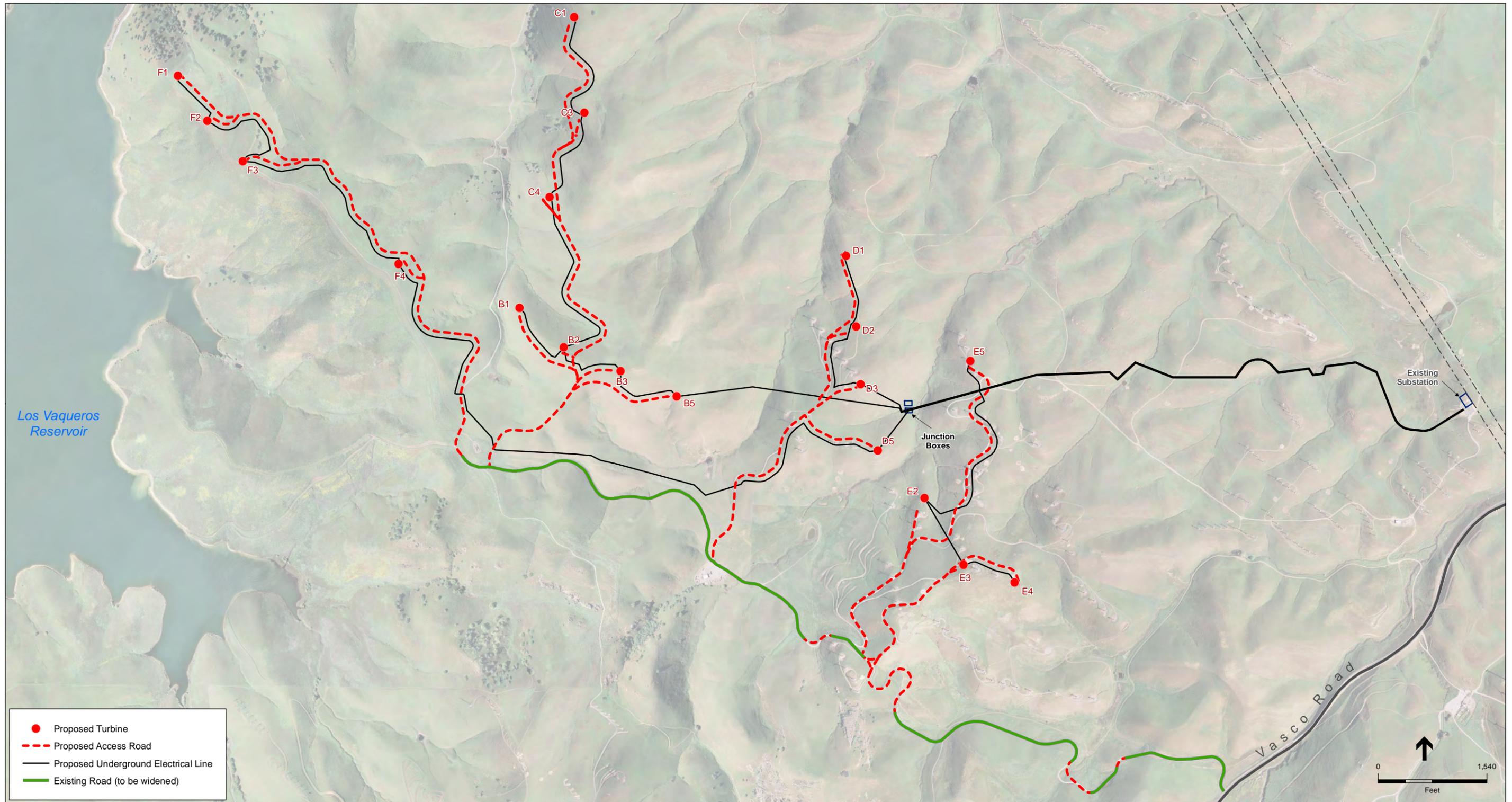
1. The maximum number of installed turbines would be 19, two less than the maximum of 21 proposed by the Project;
2. The Environmentally Preferred Alternative involves construction of Siemens 2.3-101 (2.3-MW, 101-meter rotor diameter) turbines – other turbine models are no longer considered;
3. The site layout for the Environmentally Preferred Alternative eliminates the Project's A-string, reduces the B-string from 6 to 4 turbines, reduces the D-string from 5 to 4 turbines, and shifts the locations of several turbine sites along all strings except the F-string in response to a number of commenters' concerns and an additional round of micrositing (see Figure 2.2.2-1 compared to DEIR Figure 3-3);
4. Some roads proposed under the Project have been eliminated or realigned;
5. The total miles of new road would be reduced from 9.1 miles under the Project to 8.3 miles under the Environmentally Preferred Alternative, and the total miles of improved road would not change.

The Environmentally Preferred Alternative, while having many similar impacts to the Project, attempts to reduce Project impacts in the following manner:

1. Elimination of the A-string would reduce impacts to cultural resources in the vicinity of the proposed A-string in an identical manner to that described for Alternative 3A in the DEIR.
2. Reduction of the total number of installed turbines from 21 to 19 would tend to reduce the visual density of the wind turbines over the Project area and would lessen the severity of some aesthetic impacts in a manner similar to that described for Alternative 3. However, all significant and unavoidable impacts would remain significant and unavoidable.
3. While the Environmentally Preferred Alternative would not reduce biological impacts to less-than-significant levels, the combination of the reduction from 21 to 19 installed turbines, the additional round of micrositing necessitated by the layout changes, and the reduction in new road length from 9.1 to 8.3 miles would tend to reduce some biological impacts over those of the Project.
4. Out-sloping of the Project roads would reduce potential erosion impacts by minimizing the need for new ditches and culverts, which concentrate runoff, and allowing for more sheet flow.

The text below provides additional details regarding construction and maintenance of the Environmentally Preferred Alternative, which address individual concerns raised in this master response.

1. Road construction on steep slopes is minimized in the revised road layout. In examining the layout, most of the 14 percent slopes are less than 500 feet in length. Where it is evident



SOURCE: Pattern Energy, 2011a

Tres Vaqueros Windfarm Repowering Project . 209132.02
Figure 2.2.1-1
 Environmentally Preferred Alternative Project Layout

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that steep roadway slopes would potentially cause erosive storm water run-off velocities, energy dissipation Best Management Practices (BMPs) such as riprap would be installed to minimize erosion risk.

2. Due to the high topographic relief of the area, restricting road alignment to between 3 and 5 percent (longitudinal slope) is not feasible for the Project. Currently, approximately 80 percent of the road layout has slopes exceeding 5 percent. Assuming that the total road length for the repower project is 8.3 miles and the average slope is 8 percent, the project would need to add 4 miles of road to reduce the slopes to 5 percent maximum.
3. The use of ditches would be minimized, but where needed, they would be designed with a flat bottom as suggested by the commenter.
4. Culverts would only be used where existing roads with culverts would be widened or where a new road alignment would cross ditches or ephemeral streams. The Project would replace existing culverts with ones of the same size or 18 inches in diameter, whichever is larger.
5. Culverts would be placed at a skew angle and the outlets would be armored with rip-rap in order to reduce the erosive velocity of the water.
6. Roads would incorporate a “rolling dip” design, which is accomplished by designing the roadway system to follow existing contours in combination with utilizing an out-sloped roadway cross-section.
7. The Project would identify erodible soils to the greatest extent possible during the geotechnical field investigation, design the grading plan to minimize channel flow, and install BMPs such as rip-rap in channels, coarse road rock to encourage sheet flow across roads, erosion control blankets to protect unvegetated areas, and temporary silt fences and straw filled waddles in shallow drainages paths.
8. Maintenance crews would be trained to visually identify erosion problems and take corrective action through the least invasive method available.
9. Buffer-strip BMPs would be utilized as part of the SWPPP design for both construction and through operation and maintenance.

There were several requests for a reduced-size Project with a smaller generating capacity, either equal to the existing windfarm or less than the 42 MW proposed for the Project. The DEIR provides an analysis of two alternatives with a generating capacity equal to the existing windfarm: Section 6.5.1, *No Project Alternative* (pages 6-4 through 6-10), and Section 6.5.3, *Alternative 2 – Partial Repowering to Existing Capacity* (pages 6-12 through 6-15). As shown in DEIR Table 6.6.1, the No Project Alternative was found to have less impact than the Project in the areas of Aesthetics, Air Quality, and Noise. The No Project Alternative would have greater impacts than the Project in the areas of Biological Resources, Energy Conservation, Greenhouse Gas Emissions, and Hazards and Hazardous Materials. Alternative 2 was found to have less impacts than the Project in the areas of Aesthetics; Agriculture Resources; Biological Resources; Geology, Soils, Seismicity; Mineral Resources; Land Use and Planning; Noise; and Traffic and Transportation. Alternative 2 would have greater impacts than the Project in the areas of Energy Conservation and Greenhouse Gas Emissions.

Regarding alternatives with a smaller generating capacity than the Project, as stated on DEIR page 6-3:

“In addition to the Project analyzed in this EIR, the Applicant considered a number of other turbine layouts and size configurations ranging from more than approximately 40 1-MW turbines to less than 30 2-MW turbines. These different configurations were considered and rejected based on engineering efficiency and cost considerations as well as preliminary environmental concerns such as avian mortality, potential impacts to jurisdictional waters (including wetlands), avoidance of highly erosive areas, etc.”

Furthermore, the Applicant has stated that that a repowered Project with a capacity smaller than 42 MW would not be economically feasible.

Figures 2.2.1-2a through 2.2.1-2i show a series of visual simulations of the Environmentally Preferred Alternative. The simulation viewpoints are summarized below in Table 2-2, which also indicates with which DEIR figure the FEIR simulation corresponds. For example, FEIR Figure 2.2.1-2a, shows a simulation of the Environmentally Preferred Alternative from the Los Vaqueros Watershed, Vista Grande Trail; DEIR Figure 4.1-7 shows a simulation of the Project from the same viewpoint.

**TABLE 2-2
SIMULATION VIEWPOINTS OF ENVIRONMENTALLY PREFERRED ALTERNATIVE**

FEIR Figure	Corresponding DEIR Figure	Description of View	Direction of View	Approximate Distance to Project (miles)
2.2.1-3a	4.1-7	Los Vaqueros Watershed, Vista Grande Trail	E/SE	2.0
2.2.1-3b	4.1-8	Los Vaqueros Watershed, Los Vaqueros Shoreline Trail	E	2.5
2.2.1-3c	4.1-9	Los Vaqueros Watershed Marina	N/NE	1.8
2.2.1-3d	5-2	Cumulative Impacts from Los Vaqueros Watershed east of Morgan Territory Regional Preserve	E	4.0
2.2.1-3e	5-3	Cumulative Impacts from Los Vaqueros Watershed Marina	N/NE	1.8
2.2.1-3f	4.1-10	Los Vaqueros Watershed Office	S	0.5
2.2.1-3g	4.1-3	Tres Vaqueros Windfarm (not a public viewing location)	NW	Within Project
2.2.1-3h	4.1-5	Vasco Road 1.6 miles south of intersection with Camino Diablo	W/SW	1.5
2.2.1-3i	4.1-6	Vasco Road 3.3 miles south of intersection with Camino Diablo	W/SW	0.5

With a reduction of two turbines, aesthetic impacts from the Environmentally Preferred Alternative would be similar to, or slightly less than the Project. For an analysis of aesthetic impacts from this alternative, see Response A-2.



Visual simulation of the Environmentally Preferred Alternative from Los Vaqueros Watershed, Vista Grande Trail

SOURCE: Environmental Vision, 2011

Tres Vaqueros Windfarm Repowering Project . 209132.02

Figure 2.2.1-2a
Visual Simulation



Visual simulation of the Environmentally Preferred Alternative from Los Vaqueros Watershed, Los Vaqueros Shoreline Trail



Visual simulation of the Environmentally Preferred Alternative from Los Vaqueros Watershed Marina



Cumulative visual simulation of Environmentally Preferred Alternative and Vasco Winds Repowering project, from Los Vaqueros Watershed east of Morgan Territory Regional Preserve



Cumulative visual simulation of Environmentally Preferred Alternative and Vasco Winds Repowering project, from Los Vaqueros Watershed Marina



Visual simulation of the Environmentally Preferred Alternative from Los Vaqueros Watershed Office



Visual simulation of the Environmentally Preferred Alternative from Tres Vaqueros Windfarm (not a public viewing location)



Visual simulation of the Environmentally Preferred Alternative from Vasco Road 1.6 miles south of intersection with Camino Diablo

SOURCE: Environmental Vision, 2011

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Figure 2.2.1-2h
Visual Simulation



Visual simulation of the Environmentally Preferred Alternative from Vasco Road 3.3 miles south of intersection with Camino Diablo

Figure 2.2.1-3 shows estimated noise levels (dBA) associated with the Environmentally Preferred Alternative. Figure 2.2.1-3 can be compared with DEIR Figure 4.13-2, which shows the same information for the Project. While the reduced number of turbines and the modifications to the turbine layout in the Environmentally Preferred Alternative necessarily result in changes to the noise contours, the similarities support the County's conclusion that the Environmentally Preferred Alternative would not cause a new or more significant noise-related impact in comparison to the noise impacts analyzed in the DEIR. Because of the similarities, the DEIR's discussion of noise impacts is also applicable to Figure 2.2.1-3.

2.2.2 Master Response on CEQA Issues

2.2.2.1 Introduction

Overview

This master response addresses issues concerning the California Environmental Quality Act (CEQA) and is organized by the following subtopics:

2.2.2.2 Focus of Review

2.2.2.3 Baseline

2.2.2.4 No Project Alternative

Commenters

Commenters that directly addressed one or more of these topics are:

- Letter G, Gagen McCoy for ANRT
- Letter I, Audubon Society
- Letter K, Perkins Coie for Northwind Energy, Inc.
- Letter L, Scott Cashen

2.2.2.2 Focus of Review

Comment Summary

This section of this master response responds to all or part of the following comments:

G-2

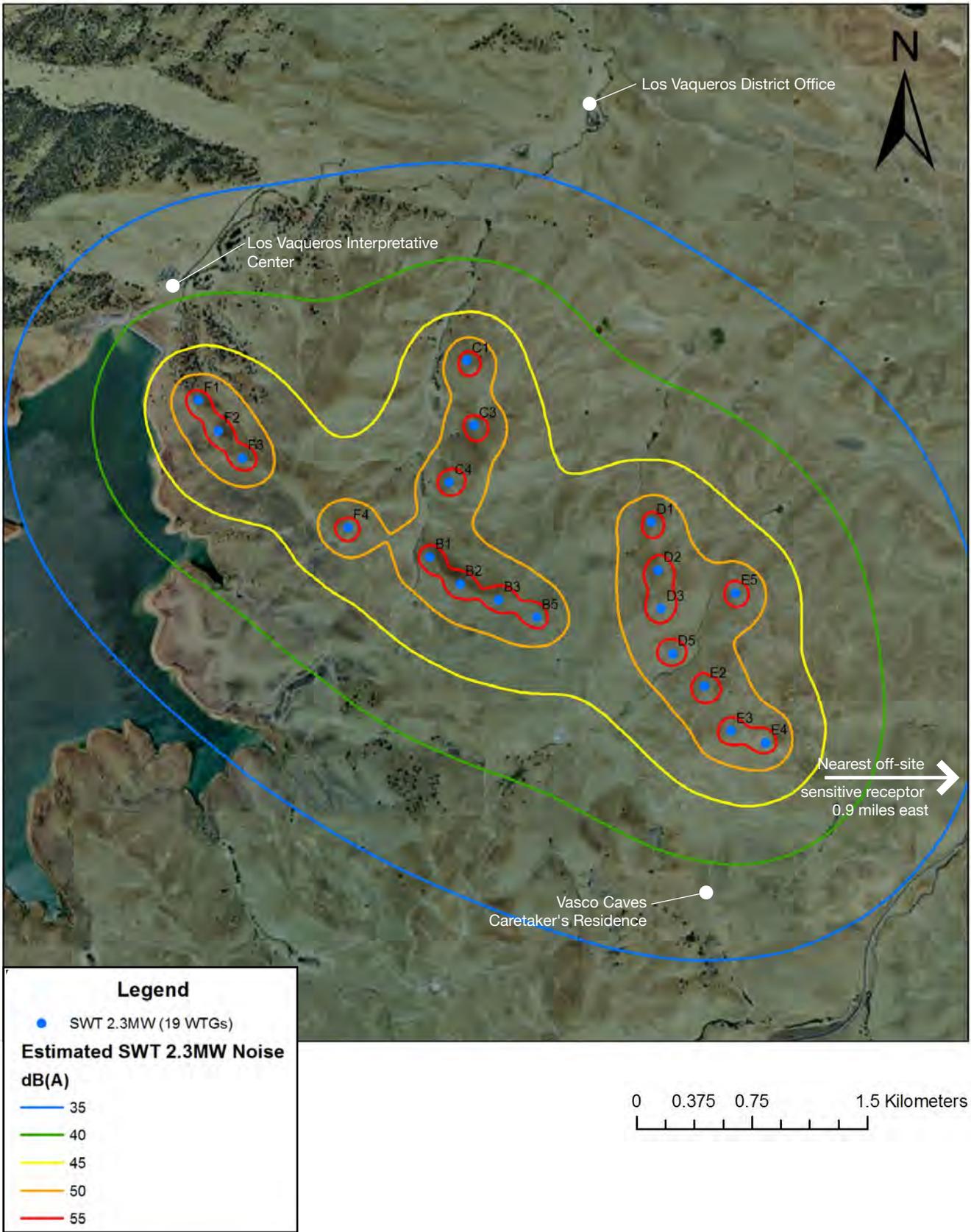
I-2

K-1

L-4

Summary of Issues

- Commenters offer opinions but do not challenge the adequacy of the DEIR.
- Commenters offer unsubstantiated assertions and opinions regarding the adequacy of the DEIR.



SOURCE: Pattern Energy, 2011a

Tres Vaqueros Windfarm Repowering Project . 209132.02
Figure 2.2.1-3
 Estimated Noise Levels (dBA) Associated with the Environmentally Preferred Alternative

Response

CEQA Guidelines § 15204, Focus of Review, states:

- (a) *In reviewing draft EIRs, persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts of the environment and the ways in which the significant effects of the project might be avoided or mitigated... CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR.*
- (c) *Reviewers should explain the basis for their comments, and should submit data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to Section 15064, an effect shall not be considered significant in the absence of substantial evidence.*

In cases where a commenter provides new information and/or substantiated facts pertaining to the Project, Project area, or DEIR, the County has reviewed the information and evaluated its bearing on the adequacy of the analysis in the DEIR. Revisions have been made to the DEIR where appropriate, and responses to such comments are provided in the master responses in FEIR Sections 2.2.1 through 2.2.4 and/or in the individual responses in Sections 2.3.1 through 2.3.14.

In cases where the commenter provides an opinion but does not challenge the adequacy of the DEIR, the County notes the opinion. Where a commenter offers unsubstantiated assertions and/or opinions about a significant environmental impact or the adequacy of the DEIR, the County notes the opinion, but does not alter the DEIR or provide additional information, per CEQA Guidelines § 15204.

2.2.2.3 Baseline

Comment Summary

This section of this master response responds to all or part of the following comments:

I-5	I-15	I-33	I-35	K-7
I-6	I-25	I-34	K-6	K-9
I-14				

Summary of Issues Raised by Commenters

- The County made incorrect assumptions about the operational status of the 91 existing turbines with respect to CEQA baseline.
- The baseline chosen is not representative of existing conditions.
- The baseline was chosen to minimize avian mortality and burrowing owls in favor of the Project.

- The DEIR uses different baselines, which is not permissible under CEQA; the DEIR should use the ‘normal’ baseline date - the date of the issuance of the Notice of Preparation.

Response

The DEIR provides the following explanation of the definition and use of baseline in the analysis (page 4-3):

Project Baseline

This subsection identifies the actual existing physical conditions to provide a point of comparison between pre-Project conditions (the baseline) and post-Project conditions in order to determine whether the change in the environment caused by the Project is significant under CEQA. The baseline is tailored to each resource area, and is predicated on the significance criteria under which the impacts are assessed.

For most resource areas, the baseline is the same as the “environmental setting,” i.e., the physical environmental conditions in the vicinity of the Project and at the Project site as they existed in the spring of 2009, when the NOP was published for the Project (CEQA Guidelines §§ 15125(a), 15126.2(a)). See, for example, Aesthetics, Agriculture and Forestry Resources, Air Quality, Cultural Resources, Geology and Soils, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Public Services, and Utilities and Service Systems.

For other resource areas where conditions fluctuate, it is necessary to choose a baseline that most accurately reflects actual conditions, including averaging actual levels in order to avoid using an analytical baseline that reflects a spike or a dip. The resulting average provides a truer picture of the existing physical conditions rather than a single point in time (i.e., the publication date of the NOP). For the Project, actual conditions varied from those reflecting operation of all 91 existing turbines to no operating turbines (which was true on the date the County published the NOP). Specifically, a baseline that reflects operational conditions more realistically portrays actual conditions for Section 4.6, *Energy Conservation*, where the baseline reflects the average energy production rate at the wind farm at the time of shut down, at which time approximately 60 of the existing turbines were operational. This approach is consistent with the State Supreme Court’s decision in *SCE v. SCAQMD* which states: “Neither CEQA nor the CEQA Guidelines mandates a uniform, inflexible rule for determination of the existing conditions baseline. Rather, an agency enjoys the discretion to decide, in the first instance, exactly how the existing physical conditions without the project can most realistically be measured, subject to review, as with all CEQA factual determinations, for support by substantial evidence.”

To assist the public in understanding how the above was applied in every section of Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, a specific subsection in each area of environmental analysis labeled “Project Baseline” was presented to define the specific physical conditions represented by the baseline used in that section. As was explained in the DEIR, an EIR is not required to have a uniform baseline for all environmental topic areas.

With specific reference to the two commenters on the DEIR's choice of baselines for Biological Resources and Energy Conservation, both argue for different reasons that the 91 turbines were not operational and that for those analyses different baselines should be applied. The reasoning for how and why the Biological Resources and Energy Conservation baselines were chosen is provided below.

For Biological Resources (see Section 4.4, *Biological Resources*, in the DEIR) choice of the baseline was complex, and much of the analysis assumed a baseline consistent with the date of the NOP (Spring 2009). This choice was appropriate because it represented the physical conditions on the ground in the Project area where the 91 wind turbines and infrastructure existed (and continue to exist today), and the continuance of on-site maintenance operations.

During development of the Biological Resources baseline, no site specific data about avian and bat fatality was available. Therefore, in order to establish an approximate baseline for avian and bat fatality rates at the existing windfarm, it was necessary to estimate what it would have been in previous years. This process is consistent with what was discussed in DEIR Section 4.4.3, *Project Baseline*. The specific science used to derive this baseline is provided as Appendix D-2 of the DEIR and was prepared by Shawn Smallwood, Ph.D., under contract to the EBRPD. Choosing this estimated baseline for fatality rates allowed for public disclosure of what the existing conditions at the windfarm were believed to be, based on the best available science, and provided a basis for comparison of the likely fatality rates with the repowered Project. One commenter argues that this comparison tends to minimize the potential effects of the Project; quite the contrary, the chosen DEIR baseline provides a realistic basis against which to measure the CEQA change. The County determined that the chosen baseline would enable analysts to most accurately establish a sensible pre- and post-Project change in fatality.

For Energy Conservation (see Section 4.6, *Energy Conservation*, in the DEIR) the baseline chosen was conditions as they existed in 2008, the last year of operation of the existing windfarm where 60 of the 91 turbines were operated. The reason for choosing this year for the energy baseline was that although the turbines were shut down in 2009 (when the NOP was issued), from an energy perspective the same 60 turbines could be turned on again (with some maintenance) without any discretionary approval. Another related aspect of the energy analysis considered downwind effects on a nearby wind energy farm (Northwind); for that analysis whether operating or not, the existing 91 turbines tend to act as at least a static obstacle¹ to the wind flow. Furthermore, again for energy conservation, it was necessary to judge the CEQA change in energy generation potential from the existing windfarm in its operating state (2008) against the new repowered Project.

¹ While rotating turbines would tend to disturb the wind flow to a greater degree, The existing idle 91 turbines still act as obstacles to the local wind flow and disturb the downwind flow.

2.2.2.4 No Project Alternative

Comment Summary

This section of this master response responds to all or part of the following comments:

I-5

I-7

I-14

I-34

Summary of Issues Raised by Commenters

- There is no basis to assume that existing conditions would extend beyond 2013.
- The No Project Alternative should assume that after 2013 the site would be free of turbines.
- The commenter disagrees with DEIR assumptions that the useful life of the Project's repowered turbines would be 30 years and that decommissioning of the Project would ever occur.

Response

The commenter asserts that there is no basis to assume that the existing turbines would (or could) operate beyond 2013. The Applicant's Land Use Permit expires in April of 2013; other permits, including the Applicant's lease, expire in 2014 (see pages 3-1 and 6-4 of the DEIR). The Applicant would need a new Land Use Permit to operate beyond 2013. As was stated in the DEIR on page 3-1, "All existing turbines were shut down in 2009 in anticipation of repowering. At the time of shut down, approximately 60 of the existing turbines were operational..." Nothing has changed on the site since that point and clearly at least 60 of the turbines would be capable of being returned to service at any point prior to 2013. Furthermore, the Applicant has the option to extend its lease for the expected additional 30 years. The No Project Alternative (see Section 6.5 of the DEIR) was formulated to address this very scenario. In discussions with the Applicant about its likely action if the Project was not approved, the response was that it would most likely return the existing turbines to service and apply to extend its Land Use Permit. The Applicant would also be likely to exercise its option to extend its lease. So in contrast to the view of commenter, the County has reason to believe that this is a credible No Project Alternative.

Note that the DEIR also explored other alternatives which considered the complete decommissioning of the existing windfarm (Alternative 1, DEIR page 6-10)) and a partial repowering of the windfarm (Alternative 2, DEIR page 6-12).

With regard to the expected useful life of the Project, a nearly 30-year lifetime has already been achieved with the existing turbines. With the new repowered turbines, it is not unreasonable to expect that their useful life would be similar with proper maintenance. In 30 years, should the Applicant seek a new Land Use Permit, County review would occur similar to the CEQA review currently in process. If not sought by the Applicant or if the application for renewal were denied by the County, the Applicant would have to decommission the site.

2.2.3 Master Response on Biological Resources

2.2.3.1 Introduction

Overview

This master response addresses the issues commenters raised concerning impacts to biological resources. It is organized by the following subtopics:

- 2.2.3.2 Erosion Control/Sediment Transport
- 2.2.3.3 Conservation Easements
- 2.2.3.4 Avians
- 2.2.3.5 Bats
- 2.2.3.6 Burrowing Owls
- 2.2.3.7 Grassland Wildlife Species
- 2.2.3.8 Regulatory Agency Permitting
- 2.2.3.9 Impacts to Vegetation Communities and Special-status Plants

Commenters

Commenters that addressed one or more of these topics are:

- Letter A, CCWD
- Letter B, EBRPD
- Letter C, USFWS
- Letter D, CDFG
- Letter G, ANRT
- Letter H, Save Mt. Diablo
- Letter I, Audubon Society
- Letter J, CNPS
- Letter L, Scott Cashen
- Letter M, Pattern Energy
- PH, Public Hearing

2.2.3.2 Erosion Control/Sediment Transport

Comment Summary

This section of this master response responds to all or part of the following comments:

G-7 G-25 G-43 H-4 H-34
G-17b

Summary of Issues Raised by Commenters

- The substantial amounts of sediment from the existing windfarm's roadway system have been deposited downstream of the roads, affecting water quality and the viability of the aquatic habitat to support special-status species.

- Sediment from the construction of new and improved roads may impact downstream aquatic habitat on neighboring properties that have land management responsibilities and objectives related to biological resources.
- Changes to roadway design are recommended to lessen or avoid impacts to biological resources resulting from erosion and sedimentation.
- Work should only be conducted during the dry season on all road slopes greater than 30 percent, and on slopes greater than 10 percent that drain to CCWD and ANRT lands.
- The downstream damage caused by sediment resulting from the existing windfarm facilities indicates that the prior protections provided by the windfarm owners and approved by the County have failed.
- The Applicant should provide funds for, or conduct maintenance activities in cooperation with, the ANRT and USFWS to periodically remove excessive sedimentation resulting from Project-site erosion that impacts downstream aquatic systems, including sensitive species habitat and sensitive vegetation communities.
- Mitigation Measure 4.4-11(ii) is not specific enough to evaluate the key provisions of the Stormwater Pollution and Prevention Plan (SWPPP) to determine its adequacy.
- The DEIR does not adequately address the issue of long-term soil erosion on special-status species' aquatic breeding habitats and does not adequately mandate mitigation measures that would ensure erosion problems would be adequately identified and remedied over the life of the Project.

Response

Erosion Caused by the Existing Wind Energy Facility

Comments regarding excessive downstream siltation resulting from source erosion at the existing windfarm, received from the ANRT, CCWD, EBRPD, and others, are noted. It is not the purpose of EIRs to evaluate and mitigate for impacts caused by existing facilities. Thus, erosion caused by the existing wind energy facility is not analyzed in the DEIR.

Potential Erosion Resulting from the Project

The DEIR adequately addresses the Project's potential to cause erosion and provides mitigation to resolve impacts (see DEIR Section 4.10.6.2). The Project emphasizes the use of the existing road network wherever possible to reduce unnecessary ground disturbance. In areas where new road alignments are required, topography data with two-foot contour intervals has informed roadway design so that the layout follows existing contours and avoids road construction on steep slopes to the extent possible, thereby minimizing fill requirements in low spots and reducing the need for cross-road culverts that are often a source of erosion. USDA soil maps have been used to identify erodible soils and incorporate Best Management Practices (BMPs) into roadway design. During Project operation and maintenance, crews would be trained to visually identify erosion problems and implement corrective actions that are effective and low-impact.

As discussed in Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*, construction of new roads would follow an out-sloped cross-section design that would eliminate the need for ditches, minimize dirt work, and minimize the future erosive effects of stormwater runoff. The design would also include “rolling dips” that allow gentle sheet flow across the roadway, accomplished by designing roadways to follow existing contours in combination with the out-sloped roadway cross-section.

Examination of the road layout indicates that most of the steeper, 14 percent-maximum slopes are less than 500 feet in length. In areas where steep roadway slopes are anticipated to potentially contribute to erosive stormwater velocities, County-approved energy-dissipation BMPs would be implemented to minimize erosion risk (see Mitigation Measure 4.10-3b as revised in this FEIR).

Buffer strips could be utilized as part of the SWPPP design for the construction, operation, and maintenance phases of the Project. Buffer strips are vegetated areas along linear features, such as roadways, that treat sheet flow from adjacent surfaces. Buffer strips function by slowing runoff velocities and allowing sediment and other pollutants to settle, and by allowing for some infiltration into underlying soils.

The Project Applicant has committed to minimizing the number of culverts and, wherever possible, at-grade crossings would be constructed at drainage crossings. It is anticipated that new culverts would only be installed at locations where road re-alignments cross existing drainages. Culverts would be oriented at a skew angle to the drainage and the outlets armored with a County-approved BMP to reduce the erosive velocity of the water. Existing culverts would not be removed at road-widening locations, but rather replaced with an existing culvert of the same size or 18-inch diameter, whichever is greater.

Several commenters expressed the opinion that past erosion protection measures established and approved for the existing wind energy facility have failed, and are concerned that similar failures would occur under the Project. Commenters are concerned that the steep topography of the Project area would contribute to excessive erosion during Project construction. Several commenters assert that operation of the existing windfarm has caused excessive erosion to occur in the Project area, and sediment adversely impacts downstream aquatic habitat on neighboring properties that have land-management responsibilities and objectives related to biological resources. Commenters are concerned that during operation of the proposed Project, excessive erosion could occur and sediment could adversely impact downstream aquatic habitat. The existing wind energy facility was constructed in 1984/85, but during the interim public concerns over soil erosion and excessive siltation of aquatic environments has been mirrored by advances in construction BMPs and erosion-control technology. As discussed in DEIR Section 4.10, *Hydrology and Water Quality*, the SWRCB adopted a new General Construction Permit for Discharge of Stormwater Associated with Construction Activities, effective July 1, 2010. This included several new compliance items, including mandatory BMPs to reduce erosion and sedimentation. Under the updated permit, additional and more stringent monitoring, reporting, and training is required for management of stormwater pollutants. The County requires the use of

current BMPs and erosion-control technology during Project design and construction, in addition to erosion control as a maintenance activity over the life of the Project.

Measures for the ongoing identification and remediation of erosion control problems are identified in Section 4.10, *Hydrology and Water Quality*, Mitigation Measures 4.10-3a and 4.10-3b, which require the Applicant to apply for and receive coverage under the County General Construction NPDES Permit. The permit includes the new stringent requirements discussed above, and also requires that all new or modified facilities, including roads, ensure no net increase in discharge rates, flow velocities, or sediment transport. Mitigation Measure 4.10-3 contains detailed measures that would be incorporated into the Project's SWPPP for preventing excessive downstream sedimentation.

The identified measures also require that excavation and grading activities in areas with slopes greater than 30 percent or adjacent to open water be conducted, to the extent possible, during the dry season (April 15-October 15), and provide further mitigation for authorized wet-season work. Due to the topographic relief of the area, restricting road alignment to slopes between 3 percent and 5 percent is not feasible. Approximately 80 percent of the Project area slopes exceed 5 percent, but the average slope is 8 percent and the maximum slope is 14 percent.

Several commenters assert that operation of the existing wind farm has caused excessive erosion to occur on neighboring properties and because these property owners incur costs for the removal of excess sediment from aquatic environments, they should receive compensation from the Applicant to pay for costs associated with removing excess sediment. However, whether these property owners should receive compensation for alleged adverse impacts is not a CEQA issue, and as such is not addressed in this EIR.

See also Section 2.2.4, *Master Response on Hydrology*, which also discusses issues pertaining to erosion and sedimentation.

2.2.3.3 Conservation Easements

Comment Summary

This section of this master response responds to all or part of the following comments:

C-2	G-3	G-5	G-25	H-2
C-4				

Summary of Issues Raised by Commenters

- The USFWS does not consider Mitigation Measure 4.4-6c to be an appropriate mitigation strategy for effects to a conservation easement area, and the information provided in the DEIR regarding effects to a conservation easement area does not reflect information provided to the USFWS by the Applicant during Section 7 consultation. Effects to conservation easement areas would require compensation for effects to listed species resulting from the Project plus compensation for effects for which the conservation easements were originally recorded, resulting in compensation at higher ratios.

- The USFWS’s Biological Opinion (BO) for the Vineyards Project (File Number 1-1-04-F-0063) vests considerable responsibility in the ANRT conservation easement holder for managing the easement according to *Long-Term Management Plan Vaquero Farms Conservation Easement*, ensuring the property is managed for the benefit of special-status species including California red-legged frog, California tiger salamander, San Joaquin kit fox, and western burrowing owl.
- The DEIR does not explain in sufficient detail the significance of the ANRT conservation easement and the limitations that the easement imposes on activities that frustrate the conservation purpose of the easement or increase management costs. The text of the conservation easement should be included in a revised EIR.
- CEQA requires the ANRT conservation easement to be protected. Further mitigation measures are required to adequately address the habitat preservation purpose and objectives of the existing easement.

Response

The DEIR discusses two conservation easements occurring in the Project area: one on lands owned by CCWD relating to the creation of Los Vaqueros Reservoir (Section 4.4.2.1, page 4.4-3), and one on lands owned or managed by EBRPD relating to the Vineyards Project (Section 4.4.2.1, page 4.4-6).

Section 4.4.6.2, *Specific Biological Resource Mitigation Measures*, page 4.4-59 of the DEIR, states that six acres of disturbance would occur within proposed or conveyed San Joaquin kit fox conservation easement areas (the Los Vaqueros Reservoir conservation easement), divided into five acres of temporary impacts and one acre of permanent impacts, but finds that the overall conservation value of the area would not be substantially reduced as a result of Project construction. Mitigation Measure 4.4-6c compensates for impacts at a minimum 1:1 ratio. In its comment letter, USFWS indicates that the Applicant did not disclose impacts to the conservation easement during Section 7 consultation. In response to the DEIR and USFWS’s comment letter, the Applicant has asserted that the conservation easement was never recorded and therefore impacts to the easement are not at issue. The County has determined from the evidence provided that, in fact, the conservation easement was never recorded. Therefore, the following language has been stricken from DEIR Section 4.4, *Biological Resources*:

- [page 4.4-3] *San Joaquin Kit Fox and Bald Eagle BO*: Protective measures contained in the BO require protecting, in perpetuity, a specified amount of San Joaquin kit fox habitat within and outside the Watershed; abiding to a recreation plan that addresses impacts on these species; and implementing a bald eagle monitoring program. This BO states that additional development under existing wind energy leases may proceed under the County’s permitting process and that designation of compensation lands will not affect the use of lands for wind energy. The Project boundary overlaps 1,449 acres of CCWD lands, with 196 acres occurring within proposed ~~or conveyed~~ San Joaquin kit fox conservation easements. Six acres within the easements would experience disturbance as a result of ~~p~~Project activities, with five acres temporarily disturbed and one acre permanently disturbed.

- [page 4.4-59] Grasslands are the principal habitat used by San Joaquin kit foxes for denning, foraging, and dispersal. Grassland habitats would be the primary vegetation community affected by Project construction and operation, which would permanently impact 18 acres of annual grassland habitat and temporarily impact 93 acres of grassland habitat. Of the total acres of impacted grassland habitat, Project construction would result in 6 acres of disturbance within proposed ~~or conveyed~~ San Joaquin kit fox CDFG conservation easement areas (five acres of temporary disturbance and one acre of permanent disturbance). Grassland habitat within this area would be reclaimed/restored during Project implementation.

[page 4.4-61] ~~Mitigation Measure 4.4-6c: To maintain under conservation easement the full acreage required for the original Los Vaqueros Reservoir Expansion Project, the Applicant shall replace any affected acreage of existing kit fox easement with an equivalent amount of acreage. The Applicant shall provide compensation for permanently affected conservation easement acreage at a 1:1 ratio or a higher ratio if required by USFWS or CDFG during the permitting process. Compensation for temporary impacts to lands within conservation easements shall be provided at a ratio of 1:1 or a higher ratio if required by USFWS or CDFG. A “higher ratio” may result in a less than 1 square foot by 1 square foot replacement on the ground if higher quality habitat than that affected by the Project is obtained. Compliance with required mitigation ratios shall be verified by the USFWS and CDFG. Temporarily impacted areas shall be reseeded with native species as described in the General Biological Resources Mitigation Measures.~~

Several comments were received asserting that detailed language in the Vineyards Project conservation easement agreement prevents activities that frustrate or interfere with the purpose of the easement. The DEIR accurately states that wind energy facilities are an allowable activity under the easement. The DEIR describes the direct and indirect impacts of the Project on biological resources within the Project area, including the conservation easement area. Mitigation Measures 4.4-1 through 4.4-14 provide mitigation for these direct and indirect impacts. The County presumes that, by including wind energy facilities as an approved activity under the conservation easement, the parties to the easement considered the implications of their agreement. The DEIR adequately identifies potential Project impacts and proposes mitigation to avoid, prevent, and compensate for impacts, thereby preventing frustration or interference with the purpose of the conservation easement; however, it is beyond the scope of CEQA to determine if the parties to the agreement are satisfied with their contractual obligations and responsibilities.

2.2.3.4 Avians

Comment Summary

This section of this master response responds to all or part of the following comments:

B-20	D-1	H-22	I-17	I-32
B-21	D-3	H-25	I-18	L-8
B-23	D-4	I-4	I-19	L-10
B-24	D-5	I-16	I-20	L-11
B-26				

Summary of Issues Raised by Commenters

- The DEIR should describe the relative risk of each of the 21 turbines and should include maps that indicate areas of high risk or bird density and where turbines are proposed to be sited relative to those locations.
- The DEIR cumulative analysis should focus on the likely impacts to birds and bats, and the total number of bird and bat fatalities, that could occur over the over the life of the Project. The DEIR cumulative analysis should identify biologically meaningful mitigation such as off-site conservation and protection of essential habitat, off-site conservation and habitat restoration to restore habitat function and/or increase carrying capacity, and off-site habitat enhancement.
- Reliance upon the analysis conducted by ICF International (ICF International, 2010) to conclude that the Project may result in fewer fatalities is problematic without additional information, because the projects evaluated in the ICF report are significantly different from the proposed Project.
- Post-construction monitoring should include bird use/behavior studies and fatality monitoring at all turbines at least twice per month. Justification for restricting these studies to a subset of 30 percent of turbines is not explained in the DEIR, and is considerably less intense than most past avian fatality studies. This was the original intent of an agreement among NextEra Energy Resources, Inc./ESI, Inc./ California Attorney General's Office/ Californians for Renewable Energy/ and five local Audubon chapters that informed avian impact mitigation for the adjacent Vasco Wind Energy Project, but this intent was misconstrued in that DEIR and in the present DEIR. Additionally, research conducted by the EBRPD – which informed the agreement – has shown that significant scavenging of avian carcasses occurs on at least one portion of the site, and fatality monitoring of all turbines twice per month would allow for a more precise estimate of avian and bat fatality rates.
- Monitoring should include (1) pre-construction monitoring; (2) post-construction but pre-operational monitoring of the site immediately prior to commercial operation; and (3) post-construction monitoring, including during seasonal shutdowns. Post-construction monitoring should commence upon the commercial operation date of the Project to allow for a fatality monitoring period that coincides with operational turbines and to assess start-up impacts on birds that are naïve to operational turbines.
- Post-construction monitoring should be six years in duration to allow for significant variation in yearly avian fatality rates to be captured at both the beginning and the end of the post-construction monitoring periods.
- Post-construction monitoring should include searcher efficiency and carcass scavenger removal studies to enable calculation of realistic fatality rates, and further monitoring details should be provided such as the search area (radius from the turbine), survey duration, field methods, person-hours, and the site-specific scavenger removal rate.
- Access to the Project site should be provided to qualified third parties for the purpose of conducting additional monitoring or studies beyond those required in the DEIR. Raw data should be made available upon request to third parties, for their independent analyses.
- Mechanisms that trigger Adaptive Management and the goals of the Adaptive Management Plan (AMP) should be specifically identified. The threshold for adaptive management

should be based on a statistical analysis that takes into account the sample size and other site-specific factors rather than an arbitrary percentage.

- If post-construction fatality is significantly greater than expected, additional compensatory mitigation should be required.

Response

In recent years, the APWRA has provided about 700 gigawatt-hours annually of wind generated renewable energy to California. The environmental tradeoffs include wind energy facility-related deaths of an estimated 2,230 raptors and 9,300 total birds per year, as well as impacts to other species such as bats (DEIR Section 4.4.2.3, *Regulatory Setting, 2007 Altamont Pass Wind Resource Area Settlement Agreement*, citing Smallwood and Karas, 2009). The controversial issues surrounding windfarms in the APWRA have prompted many responses to the DEIR.

In an effort to reduce avian impacts, a critical component of Project design is reliance upon micrositing, and commenters requested that the DEIR describe the relative risk of each of the 21 turbines and include maps that indicate areas of high risk or bird density. Impact 4.4-1 (DEIR pages 4.4-36 through 4.4-45) describes site-specific micrositing and its potential to reduce avian collision, but refers the reader to Appendix D-4 to read about relative turbine risks and review maps that indicate areas of high risk or bird density. Appendix D-4 has been updated in the FEIR to include another micrositing report, *Siting Repowered Wind Turbines to Minimize Raptor Collisions at Tres Vaqueros, Contra Costa County, California* dated December 22, 2010. These materials are provided in Appendix D-4 in accordance with CEQA § 15147 regarding technical detail, which states that the placement of highly technical and specialized analysis and data in the body of an EIR should be avoided through inclusion of supporting information and analyses as appendices to the main body of the EIR.

The DEIR (at pages 4.4-42 and 4.4-43) provides an assessment of avian risk, and cites a 2010 study by ICF International that found repowering in the APWRA resulted in a reduction in the estimated total number of avian fatalities and the overall mortality rate per MW of capacity for all species groups and for all individual species. The commenter objects to the use of this report to conclude that the Project may result in fewer fatalities because the search radii were insufficient to adequately assess avian fatality (the 80-meter search radius at the Buena Vista project in Contra Costa County is compared to the Shiloh 1 project in Solano County, where 81 percent of bird and bat carcasses were detected within a 90-meter search radius, although it is not stated what percentage were detected between 80 and 90 meters). The DEIR considered a wide range of studies to conclude that the Project is anticipated to reduce avian fatalities; studies are cited in the text and a literature review of additional studies is provided in DEIR Appendix D-3. As stated on page 4.4-42 of the DEIR, Project design incorporates best practices and “lessons learned” from older generation wind energy facilities. Decommissioning of the old turbines is identified as critical for reducing avian fatality, and repowering may be the most effective approach to reducing turbine-related avian fatality.

Alternative approaches to analyzing cumulative impacts related to avian and bat mortality than the one taken in the DEIR were suggested by commenters. Despite requests to identify the total number of bird and bat fatalities that could occur over the life of the Project, and to identify cumulative impacts on individual species, the numbers would only be meaningful when related to population dynamics. Such data would include the definition and quantification of the evaluated bird species population (i.e., local, regional, range-wide), identification of the age class that would most likely cause a population decline, and a determination of which age classes are impacted by the Project. This information is not known. Therefore, it cannot be ascertained the extent to which impacts from the Project and other related projects would combine to result in cumulative impacts. Therefore, to exercise caution amidst much uncertainty, the Project-specific impact to avians is considered cumulatively considerable.

An assessment of cumulative impacts over the life of the Project would benefit from providing site access to qualified researchers. Researchers have frequently asserted that assessing the APWRA as a whole unit would shed light on differences in turbine type, bird use, and avian fatalities among windfarms and provide a more accurate and comprehensive assessment of wind energy impacts. Therefore, to address cumulative impacts, Mitigation Measure 5-3 (DEIR pages 5-17 and 5-18) is revised as follows:

Mitigation: ~~No additional mitigation is feasible.~~ The Applicant shall provide, within reason, Project area access to qualified third parties over the life of the Project for the purpose of conducting additional monitoring or studies beyond those required in the EIR.

Comments were received from the Audubon Society correcting a misinterpretation of the NextEra/Audubon/CARE/Attorney General Settlement Agreement that informed mitigation in the neighboring Vasco Wind Energy Project EIR and which was duplicated in this EIR. These comments related to bird and bat use and behavior studies at a subset (30 percent) of turbines twice per month. In acknowledgement of Audubon's role as a key negotiator of and signatory to the agreement, the DEIR language for Mitigation Measure 4.4-1b(v) has been revised as follows:

- v. The program shall monitor for fatalities and conduct bird utilization and behavior studies at each repowered turbine at least once per month for the duration of the post-construction monitoring period ~~for fatalities of~~ the Focal Raptor Species and all other bird species, as recommended by the Contra Costa County Technical Advisory Committee (TAC) or an equivalent entity, which will be convened by the County for this purpose. The Applicant shall monitor a subset (30 percent) of the repowered turbines at least twice per month for the duration of the post-construction monitoring period for fatalities and bird utilization and behavior.

Multiple comments were received regarding the sequence and timing of fatality monitoring, requesting that fatality searches be performed after construction but prior to Project operation, and that regular fatality searches commence on the first operation date. The sequence and timing of fatality monitoring was established in the NextEra/Audubon/CARE/Attorney General Settlement Agreement for the neighboring Vasco Wind Energy Project EIR. To provide mitigation consistency between similar and neighboring projects, the DEIR is not revised in response to these comments. Multiple comments were received requesting a six-year post-

construction monitoring period, presumably an initial three-year period at the onset of Project operation and a three-year period after ten years of operation, to allow for significant variation in annual fatality rates to be captured at both the beginning and the end of the post-construction monitoring periods. Regardless of whether a longer post-construction monitoring plan would be more desirable, the comments do not explain how three years of monitoring would allow for significant yearly variation as compared to two years of monitoring, and the monitoring periods are consistent with published guidance (USFWS, 2010). Moreover, when the County approved the Vasco Winds Repowering Project, Mitigation Measure 4.4-1b was amended to provide the County Zoning Administrator with discretion to extend the initial 3-year monitoring period to 5 years. The County seeks to maintain consistency between the monitoring requirements for the Project and Vasco Winds. Therefore, Mitigation Measure 4.4-1b(ii) is amended as follows:

- ii. The post-construction monitoring program shall be 3 years in duration. Following the 3 years of post-construction monitoring, 2 years of further monitoring shall commence on the 10th anniversary of the Project's commercial operation date. The initial 3-year monitoring period and the subsequent 2-year monitoring period together shall constitute the post-construction monitoring period. At the County Zoning Administrator's discretion, the initial 3-year monitoring period can be extended by administrative action to 5 years.

Per the provisions of Mitigation Measure 4.4-1b(vii), all monitoring reports shall report raw data in the form of unadjusted annual fatalities for all avian species on a per-turbine and per-megawatt basis.

Mitigation Measure 4.4-1b(vii), if adopted, would require preparation of a site-specific AMP. The goal of the AMP is to reduce avian mortality with the least impact on wind energy production by continually incorporating effective mitigation measures that are based on the best available science over the life of the Project, as specifically identified in the measure. Adaptive management provides a guided approach to learning from monitoring the results of actions intended to reduce avian and bat mortality – actions for which many scientific uncertainties exist. The criteria established in Mitigation Measure 4.4-1b for birds and incorporated for bats into Mitigation Measure 4.4-3 is “whether any repowered turbines are causing significantly disproportionate Focal Raptor and/or bat fatalities relative to other turbines.” The required AMP would be used to tailor the mitigation measures if the results of the initial post-construction monitoring reports suggest that any of the repowered turbines is causing significantly disproportionate fatalities relative to other turbines. Use of the term “significantly disproportionate” is intended to mean that the threshold for adaptive management would be based on an appropriate statistical analysis that takes into account sample size and other site-specific factors. Accordingly, the DEIR refrained from basing the threshold on a stated, but arbitrary, percentage. So long as the plan is prepared and implemented to the satisfaction of the County and relevant State and federal agencies in furtherance of the stated goal, the County intended for there to be flexibility in crafting its specific provisions so that the best available science at the time the AMP is developed could inform its drafting. If post-construction fatalities are significantly greater than expected, additional compensatory mitigation could be required under the AMP. Instruments of the AMP recommended as binding are illustrative only; the use of “could” in this case was intentional, and does not preclude additional compensatory mitigation.

2.2.3.5 Bats

Comment Summary

This section of this master response responds to all or part of the following comments:

D-2

H-25

H-32

I-27

L-11

Summary of Issues Raised by Commenters

- The DEIR should identify specific bat monitoring protocols including how long monitoring would last and how the acoustic monitoring program would be organized.
- Post-construction monitoring should include bat use/behavior studies and fatality monitoring at all turbines at least twice per month. Bats are often missed by searchers, and a once-per-month monitoring cycle would likely lead to even fewer carcass detections.
- Mitigation Measure 4.4-3 should be improved by identifying mitigation that reduces predicted impacts on bats before they occur and including a provision to create and/or otherwise acquire habitat for affected bat species in turbine-free areas. The monitoring period, search radius, scavenger removal rate, scientific analysis, and reporting should be specified. The measure should also be clarified where it states “surveys may be seasonal or dependent upon an initial intense survey”. The threshold for adaptive management should be based on a statistical analysis that takes into account the sample size and other site-specific factors rather than an arbitrary percentage.

Response

DEIR Mitigation Measure 4.4-3(ii) prescribes that post-construction bat monitoring shall be conducted in the Project area in accordance with the same terms and conditions as provided in Mitigation Measure 4.4-1b for birds, that fatalities shall be reported in the same manner, and monitoring for bats shall also include long-term acoustic monitoring. Thus, the post-construction monitoring would consist of five to seven years of monitoring, and would occur for the first three to five years of operation following Project construction and for two additional years following ten years of operation, with reporting to occur in the same manner as Mitigation Measure 4.4-1b(vi). Mitigation Measure 4.4-3(ii) does not identify how the acoustic monitoring program would be organized because so little information is known regarding what bat species are present in the Project area and how they might interact with proposed turbines. Thus, Mitigation Measure 4.4-3(ii) relies on both the provisions of Mitigation Measure 4.4-1b(iii) which states that the monitoring program shall be conducted by a qualified consultant approved by Contra Costa County, and on the provisions of Mitigation Measure 4.4-3(i), where a qualified biologist experienced in bat research and detection methods would conduct pre-construction bat investigations. Such an expert should determine the appropriate search radius, scavenger removal rate, and methods for analysis. Monitoring would occur at all turbines once per month and a subset of turbines (30 percent) at least twice per month. Under the adaptive management principle if fatality detections substantially increase under the twice-per-month search frequency then additional monitoring can be imposed.

Adaptive management provides a guided approach to learning from monitoring the results of actions intended to reduce avian and bat mortality – actions for which many scientific uncertainties exist. The AMP required by Mitigation Measure 4.4-3 would be used to tailor the mitigation measures provided in 4.4-3 if the results of the initial post-construction monitoring reports suggest that any of the repowered turbines is causing significantly disproportionate bat fatalities relative to other turbines. Use of the term “significantly disproportionate” is intended to mean that the threshold for adaptive management would be based on an appropriate statistical analysis that takes into account sample size and other site-specific factors. Accordingly, the DEIR refrained from basing the threshold on a stated, but arbitrary, percentage. The adaptive management process would inform changes in any initially-imposed measures that were determined by monitoring to be ineffective in adequately reducing bat mortality. Where results indicated that the initial measures were insufficient as applied to one or more of the repowered turbines, additional focused monitoring and/or management measures could be imposed based on the best science available at the time the determination is made. In this way, the AMP does reduce predicted impacts on bats before they occur, albeit over the remaining life of the Project and not unless or until they occur to bats during the initial 3-year monitoring period. Curtailment is identified as a potential AMP mitigation to reduce Project impacts on bats. However, there is nothing in the EIR to limit the use of curtailment as a preventive measure at any time in the post-construction period if pre-construction bat surveys identify periods of intense bat activity and/or if fatality monitoring identifies impacts that curtailment could prevent; as described on page 4.4-49 of the DEIR, bat fatalities have been reduced through the use of curtailment with minimal annual power loss.

2.2.3.6 Burrowing Owls

Comment Summary

This section of this master response responds to all or part of the following comments:

B-19	H-29	H-31	L-12	L-14
B-33	H-30	I-26	L-13	L-15
H-28				

Summary of Issues Raised by Commenters

- The DEIR is unclear as to whether burrowing owl surveys were performed according to CDFG protocols.
- The DEIR should be revised to explain how the approach to relocation and burrow closure would vary.
- Mitigation Measure 4.4-2(ii)(c) contains a provision for excavating and destroying unoccupied burrows within the Project area, which may be a significant cumulative effect on burrowing animals within the Project area.
- The DEIR fails to identify a means for implementing the survey guidance prior to ground disturbance, is internally inconsistent regarding disturbance, and fails to establish a timeline for report submittal, minimum reporting standards, or a provision for its approval.

Response

Ecology and Environment, Inc. performed non-protocol surveys of the Project site in 2008 and reported their results in a 2009 report *Final Biological Resources Report, Tres Vaqueros Wind Repower Project*. In this report they identify and map the locations of observed burrowing owls, including nesting locations. After performing an initial habitat assessment on May 26, 2008, their biologists walked and/or drove the site on June 19, 24, and 26, 2008, walking transects over high-density ground squirrel burrow complexes, along drainages, around aquatic sites, in and around rock outcrops, and among heavily vegetated areas.

They recommended protocol-level surveys be completed in support of the Project. In 2010, the County also recommended that protocol-level surveys be completed in support of the Project. It is unknown whether protocol surveys have been completed, and no protocol survey reports have been received by the County. Nonetheless, the County assumes that burrowing owls are present throughout the Project area and accordingly, the DEIR contains mitigation for impacts to burrowing owls.

Mitigation Measure 4.4-2 requires the Applicant to perform burrowing owl surveys within the Project footprint and a 500-foot buffer according to CDFG burrowing owl survey guidance, which is presently the Burrowing Owl Consortium multi-phase approach to evaluate burrowing owl use. This approach consists of four phases, with Phase I consisting of a habitat assessment, Phase II consisting of a burrow survey, and Phase III consisting of burrowing owl census, surveys, and mapping. Phase IV consists of a resource summary and written report. Ecology and Environment, Inc. essentially completed Phases I and II of the survey protocol by performing a habitat assessment on May 26, 2008, and performing burrow surveys on June 19, 24, and 26, 2008. They performed most functions of Phase III by taking a census of observed burrowing owls, determining nest burrows, and documenting their observations through mapping. Maps are provided in their *Final Biological Resources Report, Tres Vaqueros Wind Repower Project* (Ecology and Environment, Inc., 2009).

The Applicant achieved the basic objectives of the CDFG burrowing owl survey guidance by identifying resident owls and their nest locations in the Project area and providing the information for review during the CEQA process, and biologists did visit the site on four occasions during the nesting season. Winter season surveys, required under the survey protocol in some cases, would allow the Applicant to identify owls presently occupying the proposed construction area and implement exclusion measures prior to the nesting season, thereby preventing a number of commentator concerns regarding burrow exclusion during the nesting season. The Applicant has not met the letter of the survey protocol but has met all of the objectives of the survey protocol, with the exception of Phase IV, the resource summary and written report. CDFG and the County have the option of withholding permits until the Applicant complies with the survey protocol to their satisfaction.

Numerous comments were received regarding burrow exclusion and closure. Of primary importance is the expectation that burrowing owls are not likely to be encountered in the construction area due to its principal location on ridgetops, areas that are not favored by

burrowing owls for their burrow locations. Audubon Society commented that it is not possible to determine whether owls have begun egg-laying and incubation. While acknowledging the concern, male and female owls can usually be differentiated by an expert, and the absence of a previously-present female from the burrow exterior during the nesting season would strongly suggest that she is egg-laying or incubating while her continued presence outside the burrow would suggest that she is not. The EIR has not been revised in response to this comment. In response to other comments regarding burrow closure, DEIR Mitigation Measure 4.4-2(ii) (page 4.4-47) has been revised as follows:

- ii. In accordance with Mitigation Measure 4.4-7, the Project construction area will be reduced to the smallest possible area. In accordance with General Biological Resources Mitigation Measure 6, the Applicant shall ensure that habitat disturbances and all Project activities are restricted to the work area identified in the final site plan approved by the County Zoning Administrator. In accordance with General Biological Resources Mitigation Measure 7, construction personnel shall be restricted to the immediate construction area and shall not venture beyond the work area identified in the approved final site plan. The work area boundary shall be ~~Construction exclusion areas (e.g., marked with orange exclusion fence or silt fence and signage,) shall be established around occupied burrows, where n~~ No disturbance shall be allowed around occupied burrows except as specified below. During the non-breeding season (September 1 through January 31), exclusion areas shall extend at least 160 feet (approximately 50 meters) around occupied burrows. During the breeding season (February 1 through August 31), exclusion areas shall extend at least 250 feet (approximately 75 meters) around occupied burrows.
- a. During the breeding season (February 1 through August 31), no-disturbance areas shall extend at least 250 feet (approximately 75 meters) around occupied burrows. If construction areas conflict with occupied burrows, occupied burrows shall not be disturbed unless a qualified, County- and CDFG-approved biologist verifies through non-invasive methods that either the birds have not begun egg-laying and incubation, or that juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- b. During the non-breeding season (September 1 through January 31), no-disturbance areas shall extend at least 160 feet (approximately 50 meters) around occupied burrows. ~~if construction work~~ areas conflict with occupied burrows ~~in construction exclusion areas~~, passive relocation techniques could be used with CDFG approval. The approach to owl relocation and burrow closure will vary depending on ~~the number of~~ whether occupied burrows occur within proposed construction areas or outside construction areas but within 160 feet. Passive relocation shall be accomplished, consistent with CDFG guidance (CDFG, 1995), by:

 - 2. Installing one-way doors on the entrances of burrows within 160 feet of the work site. The one-way doors shall be left in place for at least 48 hours to ensure owls have left the burrow and the area shall be monitored daily for one week to confirm owl use of the replacement burrows before formerly-occupied burrows may be excavated. Burrows outside of the Project footprint (i.e., the active construction area) but within 260 feet

will be covered, rather than excavated, when a burrow can be effectively covered so there is no risk of subsequent occupation by a burrowing owl during construction; covers shall be removed when construction is completed. If excavation is necessary, Burrows shall be excavated with a qualified biologist present.

- c. Unoccupied burrowing owl burrows within the ~~construction exclusion area~~ Project footprint (i.e., the active construction area), shall be excavated with a qualified biologist present, and then filled to prevent reoccupation. If any burrowing owls are discovered during the excavation, the excavation shall cease and the owl shall be allowed to escape. Excavation could be completed when the biological monitor confirms the burrow is empty.

2.2.3.7 Grassland Wildlife Species

Comment Summary

This section of this master response responds to all or part of the following comments:

C-3	H-17	H-36	L-19	L-21
H-9	H-28	I-29	L-20	L-23

Summary of Issues Raised by Commenters

- Mitigation Measure 4.4-4(ix), Mitigation Measure 4.4-4(x), and Mitigation Measure 4.4-4(xi) propose to provide compensation for permanent and temporary impacts to California tiger salamander, California red-legged frog, and San Joaquin kit fox habitat at a 1:1 ratio, which is considerably lower than compensation provided by similar wind development projects in the vicinity and is inconsistent with nearby regional conservation efforts. The Applicant's placeholder offer does not allow reviewers to make an informed decision about the tradeoffs between impacts and mitigation.
- The DEIR must provide a definition for "higher quality" habitat and establish the habitat parameters that would be measured to justify reducing the 1:1 compensation ratio.
- The DEIR must require specialized surveys for Alameda whipsnake, western pond turtle, and San Joaquin coachwhip to prevent the Project from causing unmitigated significant impacts to special-status species, and relocation details must be developed in a peer-reviewed Translocation Plan.
- The DEIR fails to minimize potential impacts on American badger by allowing preconstruction surveys to be conducted concurrently with other surveys (e.g., kit fox and burrowing owl).
- The DEIR fails to adequately consider terrestrial impacts to listed species and the commenter is not persuaded by the DEIR's conclusion that "[b]ecause decommissioning would improve habitat conditions overall relative to existing conditions" that the DEIR need not further evaluate their impacts.
- The DEIR lacks information on the compensation, compensation ratio, enforcement mechanism, and the means for preserving and managing compensation lands in perpetuity.

Response

Concerning mitigation ratios, each of the mitigation measures that would impose such a ratio would ensure that impacts would be offset on at least a one-for-one basis and expressly reserves the authority of the resource agencies with jurisdiction over the subject matter (i.e., the USFWS, CDFG, United States Army Corps of Engineers (USACE) and the RWQCB) to impose the most appropriate mitigation ratio based on their special expertise. For example, Mitigation Measure 4.4-4 (regarding California tiger salamander and California red-legged frog) states, “The Applicant shall provide compensation for permanent impacts on CTS and CRLF aestivation habitat at a 1:1 ratio (at least one square foot of compensation for each square foot of net impact) **or a higher ratio if required by USFWS or CDFG** during the permitting process. . . .” (emphasis added). Mitigation Measures 4.4-6b (regarding San Joaquin kit fox) and Mitigation Measure 4.4-10 (regarding sensitive vegetation communities) similarly reserve USFWS’s and CDFG’s authority to impose the most appropriate site-specific, Project-specific, impact-specific mitigation based on these agencies’ mission and expertise. Mitigation Measure 4.4-11 (regarding jurisdictional waters) similarly reserves to USACE and the RWQCB full authority to impose an appropriate requirement.

The County is aware that resource agencies like USFWS and CDFG are concerned primarily with the quality of the habitat to be conserved. While mitigation ratios of 1:1 for temporary impacts and 3:1 for permanent impacts commonly are imposed, the actual ratios imposed for the Project have not yet been determined and would depend on site-specific, Project-specific, impact-specific considerations for each of the affected species. For these reasons, the ratios stated in the mitigation measures in DEIR Section 4.4, *Biological Resources*, have not been revised. Also based on relative habitat value considerations, the County notes that the resource agencies’ determination of a “higher ratio” may result in a less than 1 square foot by 1 square foot replacement on the ground if higher quality habitat than that affected by the Project is obtained. Mitigation Measure 4.4-4(x)(i) prescribes that suitable compensation consists of: (1) purchasing and enhancing suitable habitat, converting it to a conservation easement, and conveying the easement to a managing agency or institution in perpetuity; (2) participating in a resource agency-approved mitigation bank that provides offset mitigation credits for loss of California tiger salamander and California red-legged frog habitat; or (3) a combination of both. A similar definition would apply to all species for which habitat compensation is proposed.

Specialized surveys to detect, capture, and translocate special-status reptiles such as Alameda whipsnake, western pond turtle, and San Joaquin coachwhip are not feasible in grassland habitat for a project of this magnitude. Western pond turtles are detectable in aquatic environments, which would be avoided by the Project. The use of pit-fall traps is the typical method used to capture snakes, but pitfall traps would not be feasible over many acres; such traps must provide a mechanism for adequate temperature moderation amid hot, un-shaded grasslands, must be reliably checked at least twice daily, and must be established rather abundantly over the Project area. The potential for pit-fall traps to result in mortality stemming from temperature extremes and intra-trap predation makes it unlikely that USFWS and/or CDFG would permit the use of such traps, especially when the likelihood of encountering the species is low. As described in the DEIR on page 4.4-58, these species are presumed present as stated in the DEIR, occurring infrequently or transiently in Project area grasslands.

American badger activity has been identified in the Project area, as described in DEIR Appendix D-1. DEIR Mitigation Measure 4.4-7(ii) prescribes pre-construction surveys for American badger concurrent with other required winter/spring month pre-construction surveys. There is no published guidance from USFWS or CDFG on how to conduct pre-construction surveys for badgers. Borrowing from published survey guidance of other ground-dwelling species in the area, such surveys would typically occur within 30 days of ground disturbance. Performing badger surveys concurrent with other pre-construction surveys is a reasonable mitigation measure.

Relocation of encountered individuals from within the active construction area to locations 0.5 mile outside the active construction area is not likely to result in relocation outside a home range or preferred vegetation type, as one commentator asserts. The Project area largely consists of a homogenous annual grassland community, which occurs both within and outside the proposed construction area. The home ranges for San Joaquin coachwhip are not known, western pond turtles are typically found within 1,200 feet of aquatic features but may travel much farther, and Alameda whipsnake can travel several miles among core scrub habitat areas. California red-legged frogs and California tiger salamanders may be found greater than one mile from aquatic breeding sites. Note that relocation of listed species is identified as a form of harassment, and requires specific authorization from USFWS and/or CDFG.

The DEIR adequately considers terrestrial impacts to listed species, identifying temporary and permanent effects resulting from Project construction and operation. Such effects include risk of mortality, loss of foraging habitat, and the loss of burrowing/upland refugia habitat. Mitigation includes avoidance and minimization measures, as well as compensation for temporary and permanent habitat losses.

Several commenters did not agree with the DEIR's treatment of decommissioning and its conclusion that decommissioning would improve habitat conditions overall relative to existing conditions. However, these commenters did not identify how the DEIR was inadequate or provide documentation in support of their assertions. The County notes these comments, but does not agree, and has not revised the DEIR in response (see Section 2.2.2.2, *Master Response on CEQA Issues, Focus of Review*).

2.2.3.8 Regulatory Agency Permitting

Comment Summary

This section of this master response responds to all or part of the following comments:

I-3 I-11 L-32 L-33

Summary of Issues Raised by Commenters

- The DEIR should note that an incidental take permit or other authorization to take state listed species that are not "fully protected species" would be required under the California Endangered Species Act.

- The DEIR fails to describe any consultations between the Applicant and USFWS and CDFG regarding incidental take of listed species, fails to establish a mechanism for ensuring the Project receives incidental take authorization prior to any activities that may cause take, and fails to discuss this standard.

Response

In DEIR Section 4.4, *Biological Resources*, the Regulatory Setting in Section 4.4.2.2 identifies federal, State, and local laws and regulations applicable to the Project. DEIR Chapter 3, *Project Description*, Table 3.8 identifies the potential permits, approvals, and agency consultations that would be required for the Project, and states that the Applicant would obtain permits and/or approval as needed from, and would participate in reviews and consultation as needed with, federal, State and local agencies as show in Table 3-8.

Table 3.8 describes, among other things, the following standards:

If USFWS biologists determine that the Project has the potential to adversely affect a species listed under the federal Endangered Species Act (ESA), the Project would be subject to review under either Section 7 or Section 10 of the ESA. The Section 7 process would apply if any federal approval, such as a USACE Section 404 Permit, would be required. The Section 7 process would result in inter-agency consultation and could result in the issuance of a biological opinion and/or an incidental take statement. The Section 10 process would apply if the Project could cause take of a federally-listed species and no other federal approval would be required. The Section 10 process would require preparation of a Habitat Conservation Plan and would result in issuance of an incidental take permit.

Consultation with CDFG is needed to address potential effects to State-listed species under Section 2080 of the Fish and Game Code. Upon reviewing the federal Biological Opinion, CDFG will determine if it is “consistent” with the requirements of the California Endangered Species Act (CESA) for jointly-listed State/federal listed species. If CDFG determines that the federal statement/permit is not consistent with CESA, or to address impacts to State listed species that are not federally listed, then the Applicant must apply for a State Incidental Take Permit under section 2081(b) of the Fish and Game Code.

2.2.3.9 Vegetation Communities and Special-status Plants

Comment Summary

This section of this master response responds to all or part of the following comments:

B-26	J-2	J-8	J-12	L-28
G-21	J-4	J-9	L-25	L-29
H-16	J-5	J-10	L-26	L-30
J-1	J-6	J-11	L-27	

Summary of Issues Raised by Commenters

- Rare plant surveys were not conducted during the appropriate periods, and the Applicant has not conducted the protocol surveys necessary to document the presence, abundance, and distribution of these species and determine if mitigation is adequate.

- A complete documentation of baseline plant communities in the Project area has not been provided, including an enumeration of affected populations and number of individuals impacted.
- Indirect impacts on *Atriplex depressa* through introduction of invasive weeds during construction activities were not identified.
- Figure 4.4-3 is an inadequate representation of plant communities that would be affected by construction, and should contain an overlay of significant plant species occurring on the Project site.
- The Project should require soil compaction anywhere there would be soil disturbance.
- The Noxious Weed and Invasive Plant Control Plan should be included as part of the EIR. The Plan should include the results of a biological weed survey and a list and corresponding map of weed species present at the Project site.
- The DEIR fails to assess the significance of effects to special-status plants and their habitat during construction of new access roads and turbine pads, road-widening efforts, grading activities, and trenching activities associated with installation of the new underground collection system. It fails to describe nearby populations and total species distribution for each potentially-impacted species and sensitive natural vegetation community, and fails to provide a discussion of the relative significance of potential direct, indirect, and cumulative impacts on each of the 34 special-status plant species that may occur in the Project area.
- CNPS guidance specifically excludes salvage and relocation techniques from mitigating Project effects to less-than-significant levels.
- The DEIR must establish a means for conducting appropriately-timed plant surveys and evaluating the results before ground disturbance activities begin.
- The DEIR needs to establish the minimum buffers that would be installed around special-status plant populations.
- The DEIR must establish minimum measurable performance standards for Mitigation Measure 4.4-8.

Response

As described on page 4.4-65 of the DEIR, vegetation communities were mapped on May 26, 2008, and floristic botanical surveys were performed on June 10, June 19, and July 12, 2008, by Ecology and Environment, Inc. to document the presence/absence of spring- and summer-blooming species identifiable at the time of the survey. Their report identified 28 special-status plants with potential to occur in the Project area and 21 species potentially identifiable during the June/July surveys (Ecology and Environment, Inc., 2009). The DEIR identified 34 special-status species with potential to occur in the Project area and discusses on page 4.4-66 the need for additional surveys in accordance with CDFG's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*.

Figure 4.4-3 is mischaracterized by the commenter as representing special-status plant communities in the Project area. Figure 4.4-3, as titled, depicts general vegetation communities in the Project area that are based on the Holland (1986) classification system. The text of the DEIR does identify the presence of one California Rare Plant Rank species and six Locally Unusual and Significant species in the Project area. It also identifies three elderberry shrubs that are suitable habitat for the federally-endangered Valley elderberry longhorn beetle, and Oregon White Oak Woodland, Creeping Rye Grass Turfs, and Purple Needlegrass Grassland sensitive natural communities. For those species that are visible at the map scale, Figure 4.4-11 portrays special-status plant occurrences in the Project area.

While a full documentation of rare plants and sensitive natural communities in the survey area is preferable to include in the DEIR, such documentation was not available. CEQA Guidelines § 15204(a) does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters, or to provide all information requested by reviewers; this section also applies to the request for the Noxious Weed and Invasive Plant Control Plan required under Mitigation Measure 4.4-9(vi) to be included in the EIR. Regarding the ability to conduct rare plant surveys prior to planned Project construction, the Applicant may be presently conducting surveys and the sequential nature of Project construction over the construction year may also provide additional time to complete rare plant surveys. Ultimately, the County, USFWS, and/or CDFG may withhold permits if protocol surveys are not performed to their satisfaction.

Mitigation Measures 4.4-9(i) and 4.4-9(ii) require surveys along the newly-added F-string and supplemental surveys in all other areas prior to ground disturbance. Mitigation Measure 4.4-10(ii) provides compensation for impacts to sensitive natural communities if they cannot be avoided by Project construction. Mitigation Measure 4.4-9(v) provides compensation for the loss of special-status plants that cannot be avoided by Project construction, and requires a full evaluation of translocation to be included in a restoration and mitigation plan. While CNPS guidance may disallow translocation as an effective mitigation for reducing impacts to less-than-significant levels, translocation is allowed by USFWS and CDFG and remains an effective option under CEQA for mitigating potential impacts. CDFG has published *California Department of Fish and Game Guidelines for Conservation of Sensitive Native Plant Resources [Within the Timber Harvest Review Process and During Timber Harvest Operations]*; this guidance is not specified in Mitigation Measure 4.4-9(v) due to the Project differences implied by the title, but methods are likely to be similar. Mitigation Measure 4.4-9(iv) does not specify buffers because, in accordance with General Biological Resources Mitigation Measure 6, habitat disturbances and all Project activities are restricted to the work area that would be identified in the final site plan approved by the County Zoning Administrator; everything outside this area would be avoided, and the distances to sensitive species and vegetation communities would vary. Mitigation Measure 4.4-9(v) provides that measurable success criteria would be established in the restoration and mitigation plan that would be written after floristic surveys are completed. Criteria may differ depending on the species, if any, which are impacted, but success criteria typically include an 80 percent survival rate over a five- or ten-year monitoring period.

The DEIR could be more specific in its impact discussion on page 4.4-65 by adding “direct mortality” to the language describing construction effects on special-status plants and their habitat. However, this would not change any material facts or conclusions reached in the DEIR. While a discussion of indirect impacts on page 4.4-67 does not specifically identify indirect impacts on *Atriplex depressa*, indirect impacts on all special-status plants are identified as having the potential to occur through the introduction of invasive weeds during construction activities. The significance of these effects is identified as potentially significant unless mitigation is implemented. Cumulative impacts to special-status plants are analyzed in Chapter 5, *Other CEQA Considerations*.

At least one commenter requested soil compaction anywhere soil disturbance occurs. While soil compaction may be beneficial for weed suppression, soil compaction is neither beneficial for burrowing mammals nor for special-status amphibian species that find upland refugia in such burrows. Thus, because there are potential biological impacts on other species, the Biological Resources section of the DEIR would not specifically require soil compaction. Soil compaction is anticipated to occur within the entire construction area, and this impact on special-status species has been characterized as a temporary or permanent loss of grassland habitat, with associated mitigation.

2.2.4 Master Response on Hydrology

2.2.4.1 Introduction

Overview

This master response addresses issues commenters raised regarding existing on-site and downstream drainage, erosion, sedimentation, and water quality; potential additional on-site and downstream drainage, erosion, sedimentation, and water quality issues; concerns regarding the type of drainage control facilities or procedures included on-site; concerns regarding the extent to which potential hydrology, drainage, and water quality impacts were addressed on-site; and the need for the EIR to more fully address consistency with the RWQCB’s Basin Plan for the region.

This master response is organized by the following subtopics:

2.2.4.2 Drainage, Erosion, and Sedimentation

2.2.4.3 Water Quality

Commenters

Commenters that addressed one or more of these topics are:

- Letter B, EBRPD
- Letter F, RWQCB
- Letter G, Gagen-McCoy for ANRT
- Letter H, Save Mount Diablo
- Letter K, Perkins Coie for Northwind Energy, Inc.

2.2.4.2 Drainage, Erosion, and Sedimentation

Comment Summary

This section of this master response responds to all or part of the following comments:

B-7	B-30	G-14	G-18	G-32
B-8	B-31	G-16	G-19	H-4
B-29	B-40	G-17a	G-20	H-33

Summary of Issues Raised by Commenters

- The Project's proposed facilities, including the maintenance facility, roads, impervious surfaces, and other facilities, could deleteriously affect hydrology relating to drainage, erosion, and sedimentation within and downstream of the Project area during construction and operation. These effects were not adequately evaluated within the DEIR.
- Existing facilities on-site, including existing roads and the existing maintenance facility, have contributed to on-site and downstream downcutting, loss of sediment, damage to existing riprap, and sedimentation in sensitive downstream stockponds.
- Restoration of the drainage affected by the Project provides a good opportunity to mitigate existing drainage issues and downstream sedimentation issues.
- Various specific management practices are suggested in order to rectify apparent stormwater, drainage, erosion, and sedimentation issues on-site.
- Pages 4.10-4 and 4.10-6 et seq. of the DEIR reflect an incomplete understanding of the localized scouring that takes place at the Project site, under current conditions, due to existing windfarm roads, drainage collection ditches, and water collection and transportation culverts.
- Just because the 2006 303(d) list of water quality impaired segments does not include waterways located on-site does not mean that the EIR should discount erosion and sedimentation issues that have occurred on-site.
- Culverts should not be used because they concentrate runoff and cause downslope scouring. A broad-sloping grassy plain, swale, or other sloping grassy area should be utilized instead.
- Out-sloped roads should be utilized in lieu of in-sloped roads; grading and installation of roads should follow procedures suggested by the commenter.
- Mitigation Measure 4.10-3a (Implementation of a SWPPP pursuant to a General Construction NPDES Permit) does not provide optimum protection due to potential for wet period work.
- The DEIR does not adequately address erosion associated with transmission line construction activity.
- The DEIR does not address cumulative impacts associated with constructing and maintaining the Project area roads, drainage ditches, culverts, and other drainage systems.

Response

The DEIR addresses potential drainage, erosion, and sedimentation impacts that could result from Project construction and operation under Impact 4.10-3 (DEIR pages 4.10-17 through 4.10-21), including provisions for mitigation measures that would employ a series of Best Management Practices (BMPs) to minimize these issues, as well as provisions for completion of a Drainage Management Plan. Additionally, the Project would be required to comply with the County's 2010 General Construction National Pollutant Discharge Elimination System (NPDES) Permit, which could require additional measures being implemented on-site in order to minimize potential erosion, sedimentation, and drainage issues during construction, and ensure that water quality is protected pursuant to Central Valley Regional Water Quality Control Board (CVRWQCB) and Basin Plan standards.

The DEIR also acknowledges long-term historic and ongoing effects on-site associated with runoff from existing facilities on pages 4.10-4 and 4.10-6, stating that, “[d]rainages within the existing wind energy facility have been affected by long-term run-off from existing facilities. In particular, existing roadways have been subject to erosion during large storm events. Also, runoff from these roadways has in some cases been channeled into areas that results in localized scouring, combined with additional erosion and sedimentation downstream. In some cases, sediment from on-site may reach the downstream waterways discussed above.” Additionally, the County acknowledges the existing drainage, erosion, and siltation issues on the Project site, which lead to erosion and sedimentation under existing conditions. For example, in several locations on-site, drainage was designed to be collected at a low spot on the inside edge of a road, transferred to a culvert under the road, and discharged to the outside edge of the road. At these locations erosion has occurred, historically and under existing conditions, at the inlet and outlet side of the culvert, due to high water velocities along the drainage channels.

Pursuant to CEQA, adverse conditions caused by the existing roads on the drainage and landscape of the Project area are considered as part of the Project's baseline condition. CEQA requires the analysis of changes in the physical environment caused by the Project in comparison to that baseline, but does not require analysis of environmental conditions that would have existed or do exist, regardless of the Project. Therefore, full evaluation of impacts associated with existing on-site activities, and mitigation that would minimize those impacts, are outside the purview of CEQA and this EIR.

However, in light of the comments received on the DEIR with respect to drainage, erosion, and sedimentation, a revised roadway layout has been developed, with an increased emphasis on utilizing the existing road network as much as possible, combined with further minimization of potential drainage, erosion, and sedimentation effects (see Figure 2.2.1-1 in Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*). Where new road alignments would be required, the revised roadway layout follows the existing contours on-site to the extent practicable, while maintaining a maximum 14 percent slope and also incorporating an out-sloped roadway cross-section. This effort, combined with additional BMPs added in support of Mitigation Measures 4.10-3a and 4.10-3b, would minimize the fill requirements in low spots and minimize the need for cross-road culverts, thereby further reducing erosion and sedimentation

issues on-site. Mitigation Measures 4.10a and 4.10b have been revised as follows to incorporate additional stormwater drainage and erosion measures:

DEIR pages 4.10-18 to 4.10-19:

Mitigation Measure 4.10-3a: To control and manage stormwater runoff during construction and decommissioning, the Applicant shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) as required under the General Construction Permit for Discharges of Stormwater Associated with Construction Activities, for all construction and decommissioning phases of the Project. The SWPPP shall identify pollutant sources that may affect the quality of stormwater discharge and shall require implementation of Best Management Practices (BMPs) to reduce pollutants in stormwater discharges.

BMPs shall include, but would not be limited to:

1. Excavation and grading activities in areas with slopes greater than 30 percent or directly adjacent to open water shall, ~~to the extent possible,~~ be conducted during the dry season (April 15 to October 15). If excavation and grading activities for other areas must be performed during the wet season (October 15 to April 15), they shall be conducted in accordance with County requirements and the requirements of the General Construction Permit for Discharges of Storm Water Associated with Construction Activities.
2. If excavation occurs during the rainy season, storm runoff from the construction area shall be regulated through a storm water management/erosion control plan that shall include temporary on-site silt traps and/or basins with multiple discharge points to natural drainages and energy dissipaters. Stockpiles of loose material shall be covered and runoff diverted away from exposed soil material. If work stops due to rain, a positive grading away from slopes shall be provided to carry the surface runoff to areas where flow would be controlled, such as the temporary silt basins. Sediment basins/traps shall be located and operated to minimize the amount of off-site sediment transport. Any trapped sediment shall be removed from the basin or trap and placed at a suitable location on-site, away from concentrated flows, or removed to an approved disposal site.
3. Temporary erosion control measures (such as fiber rolls, staked straw bales, temporary silt fences and straw-filled wattles, detention basins, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) shall be provided until perennial revegetation or landscaping is established and can minimize discharge of sediment into nearby waterways. For construction within 500 feet of a water body, appropriate erosion control measures shall be placed between the potential source of sediment and the water body.

DEIR pages 4.10-20 to 4.10-21:

Mitigation Measure 4.10-3b: Prior to issuance of grading or building permits and initiation of construction activities for the Project, the Applicant shall ~~complete~~ prepare a Drainage Management Plan. The plan shall be submitted to the Contra

Costa County Flood Control and Water Conservation District for review and approval as part of the Flood Control District's issuance of a Drainage Permit, as required by the County's 1010 Drainage Ordinance. ~~and the~~ The Applicant shall be required to implement and adhere to the plan approved by the reviewing agency plan. The plan shall include measures necessary to ensure that stormwater drainage from the proposed roadways, new substation, and other facilities is channeled into appropriately-sized drainage ditches, channels, culverts, stormwater retention ponds, and/or stormwater infiltration facilities. The plan shall require that all new or modified facilities are designed so as to ensure no net increase in stormwater discharge rates, flow velocities, or sediment transport would result from Project implementation, and that discharges from these facilities are designed so as to avoid concentrating of flow and subsequent downstream scouring or sedimentation. Proposed roadways shall be designed so as to ensure that potential for slope failure and erosion is minimized. The following additional features shall also be included:

- a. Energy dissipating features shall be utilized at culvert outfalls and steep downslopes, as warranted.
- b. Ditches shall be constructed and maintained as flat-bottomed ditches, where applicable.
- c. Use of culverts shall be minimized; culverts shall be used only in areas where existing roads with culverts are widened, or new alignment of existing roads are required which cross existing ditches/ephemeral streams.
- d. Wherever possible, at-grade crossings shall be constructed where roads intersect drainageways.
- e. Culverts shall be placed at a skew angle to the road.
- f. New roads shall be constructed and maintained with an out-sloped roadway cross section.
- g. Prior to initiation of construction, the Applicant shall identify erodible soils during geotechnical field investigations, to the extent practicable, in support of erosion control BMP application.
- h. On-site grading and drainage plans shall be designed to minimize channel flow to the maximum extent practicable.
- i. Drainage and erosion control BMPs shall be applied, as warranted, including but not limited to:
 - i. Rip-rap in channels;
 - ii. Coarse road rock to encourage sheet flow across roads;
 - iii. Erosion control blankets;
 - iv. Use of buffer-strip BMPs
- j. Operations crews shall be trained by the Applicant to identify and repair drainage and erosion related problems.

The Drainage Management Plan shall be incorporated into all design drawings and specifications as appropriate.

Note also that compliance with the County's General Construction NPDES Permit would be required for this Project, and that additional measures may be employed as a result of the permitting process.

In regards to the sufficiency of Mitigation Measure 4.10-3a, the County agrees that construction activities during the wet season should be avoided for areas with steep slopes, and has clarified Mitigation Measure 4.10-3a to that end. However, construction activities would not be entirely prohibited, and would still be allowed with the application of relevant BMPs, for areas with lesser slopes. The measures contained in the DEIR for Impact 4.10-3, along with additional drainage, erosion, and sedimentation countermeasures applied in support of the Project as discussed above, are sufficient to mitigate impacts to a less-than-significant level. The County also notes the commenter's assertion that wet weather precautions should be applied during dry season construction to slopes above 30 percent throughout the Project area and on slopes above 10 percent on CCWD lands. However, the commenter has not provided evidence regarding why the dry weather measures, including the detailed measures contained in DEIR subparagraphs 3-11 for Mitigation Measure 4.10-3a, are insufficient to address erosion potential on these slopes during dry weather construction. Therefore, the County concludes that the measures applied under the revised Mitigation Measures 4.10-3a and 4.10-3b, in combination with the updated roadway layout described in Section 2.2.1, Master Response on the Environmentally Preferred Alternative, would be sufficient to protect the Project area from erosion, sedimentation, and drainage effects associated with Project construction.

The County acknowledges commenter opinions regarding the type of gravel that should be used for road construction. Examples of appropriate erosion control devices are provided in the revised version of Mitigation Measures 4.10-3a and 4.10-3b discussed above.

With respect to the effects of the Project on downstream hydrology, the analysis provided in the DEIR focuses on evaluating and mitigating effects on-site, such that downstream effects on hydrology would not occur. For instance, Mitigation Measure 4.10-3b on DEIR page 4.10-20 indicates that a Drainage Management Plan must be prepared and adhered to in support of the Project. This plan would require that all new or modified facilities be designed so as to ensure no net increase in stormwater discharge rates, flow velocities, or sediment transportation, and that all discharges are designed to minimize concentration of flows and subsequent scouring and sedimentation. Adherence to this measure would ensure that changes to downstream hydrology would be less than significant, because no increase in discharge rates or velocities would occur.

With respect to erosion and sedimentation along transmission lines, the existing overhead transmission lines and pole locations would be reclaimed and restored as part of the Project. The proposed electrical collection/transmission system would be entirely underground with the exception of the turbine pad transformers, junction boxes, and substation. During construction, the area around these features, if cleared, would be protected from erosion by straw bales or other natural erosion control materials. These areas, as well as trenches and other disturbed land areas

on-site, would be subject to the application of BMPs as described for the revised Mitigation Measures 4.10-3a and 4.10-3b.

With respect to cumulative effects of the Project on drainage, a cumulative evaluation of potential hydrologic resources impacts, including drainage and erosion, is included on page 5-23 of the DEIR. As stated therein, potential deleterious effects of the Project relating to drainage conditions on-site would result in a less-than-significant cumulative impact to drainage patterns, flooding, runoff, and water quality related cumulative impacts. Please refer to the discussion provided on page 5-23 of the DEIR for additional details.

2.2.4.3 Water Quality

Comment Summary

This section of this master response responds to all or part of the following comments:

B-6	B-30	F-2	F-4	G-43
B-29	B-40	F-3	G-23	H-34

Summary of Issues Raised by Commenters

- The Project's proposed facilities, including the maintenance facility, roads, impervious surfaces, culverts, septic system, and other facilities, could deleteriously affect water quality within and downstream of the Project area during construction and operation. These effects were not adequately evaluated within the DEIR.
- Effects of the Project on downstream water quality, including increased sewage effluent, oil, and grease that could be discharged from proposed facilities, were not adequately addressed in the DEIR.
- The FEIR should provide an expanded discussion of the Project's consistency with the Basin Plan, in terms of protecting surface and groundwater quality in and downstream of the Project area.
- The FEIR should provide a comprehensive list of all water bodies that are included in the 2010 303(d) list, which are located on-site or downstream of the Project area, including a list of constituents or parameters for which each water body is considered listed.

Response

Three comments indicate concern regarding the potential for the proposed facilities and operations to result in deleterious effects associated with water quality. Potential for the Project to result in water quality impacts is discussed in DEIR Impacts 4.10-1 (DEIR pages 4.10-15 to 4.10-16), 4.10-3 (DEIR pages 4.10-17 to 4.10-21), and 4.10-4 (DEIR pages 4.10-21 to 4.10-22). These discussions provide a review of potential water quality impacts on-site, including storage and use of fuels, oils, and various other chemicals; accidental spill or release of such chemicals; construction-related water quality impacts; and increases in pollutant levels associated with stormwater runoff from impervious surfaces, culverts, and other proposed on-site facilities. The evaluation provided applies to all facilities included in the Project, and implements mitigation measures designed to minimize

spillage of fuels, oils, and other chemicals, and minimize emission of water pollutants via implementation of BMPs and other measures during construction and operation (Mitigation Measures 4.10-1, 4.10-3a, and 4.10-3b). Additionally, as discussed at DEIR page 4.10-18, the Project must adhere to the provisions of the County's General Construction NPDES Permit. Collectively, these measures address potential effects on water quality, and as discussed in the DEIR, are sufficient to minimize potential impacts on water quality to a less-than-significant level. The comments provided no evidence to question the adequacy or accuracy of this analysis or its conclusions.

Regarding concern over the discharge of sewage effluent, the Project would not include or result in any wastewater treatment plant discharge or other sewage discharge into surface waters. The proposed septic system would replace an existing system, would be installed in accordance with state and local regulations, would handle only relatively low flows associated with Project operation, and would not result in a direct discharge to surface waters. Therefore potential impacts to surface and groundwater quality would be minimal.

The CVRWQCB requested that the FEIR provide a comprehensive list of all water bodies that are included in the current 2010 303(d) list, which are located on-site or downstream of the Project area, including a list of constituents for which each is listed. The commenter is correct in regards to applicability of the updated 303(d) list of impaired water bodies for California, which was approved by the US Environmental Protection Agency on November 12, 2010. As indicated therein, Kellogg Creek, from Los Vaqueros Reservoir to Discovery Bay, is now included on the 303(d) list of impaired water bodies. The DEIR has been revised as follows:

DEIR page 4.10-6:

Surface Water Quality

Perhaps due to the ephemeral nature of the waterways located on-site, very limited surface water quality data are available for the Project area and its vicinity. However, neither ~~Kellogg Creek~~, Frisk Creek, nor Brushy Creek ~~are is~~ included in the 303(d) list of water quality impaired segments for California (~~USEPA, 2006~~CVRWQCB, 2010). Kellogg Creek is included on the 2010 303(d) list, and is considered to be impaired for the following water quality constituents: Escherichia coli (E. coli; unknown source), dissolved oxygen (unknown source), salinity (unknown source), sediment toxicity (unknown source), unknown toxicity (unknown source). Substantial water quality data are available for the Sacramento-San Joaquin Delta, to which both watersheds are tributary. Central Delta waters, into which Kellogg Creek discharges are included on the 303(d) list for the following constituents: Chlopyrifos (agricultural return flows, urban runoff/storm sewers), DDT (nonpoint source agriculture), Group A Pesticides (agriculture), invasive species (source unknown), Dieldrin (nonpoint source), dioxins (atmospheric deposition), exotic species (ballast water), furan compounds (atmospheric deposition), mercury (resource extraction), and unknown toxicity (source unknown) (CVRWQCB, 2010 USEPA 2010), nickel (unknown source), polychlorinated biphenyls (PCBs; nonpoint source), and selenium (industrial, agricultural and other sources) (USEPA, 2006).

DEIR pages 4.10-15 to 4.10-16:

a) Would the Project violate any water quality standards or waste discharge requirements?

Impact 4.10-1: The Project could violate a water quality standard during operations, or result in other water quality degradation during operations. (*Less-than-Significant Impact with Mitigation Incorporated*)

Construction, operation and decommissioning of the Project would not violate any waste discharge requirements because no facility-specific NPDES permit is likely to be required. Potential construction- and decommissioning-related water quality impacts are analyzed under Impact 4.10-3. However, as analyzed below, operation of the Project could violate water quality standards.

In support of Project operations, fuels, oils, lubricants, and other hazardous chemicals and potential water quality pollutants would be stored off-site. Small amounts of these and other operational chemicals would, however, be brought on-site in order to support maintenance of the wind turbines, substation, and other equipment.

Chemicals used for these purposes include transformer oils, which typically include fluorinated hydrocarbons, silicone-based oils, and/or biodegradable esters. Similarly, wind turbines require various lubricants and greases in order to function properly, and the use of maintenance equipment, including cranes, trucks, and transport vehicles requires on-site usage of fuels, oils, greases, and other fluids.

Accidental spill or release of these or other equipment-related water quality pollutants could result in a reduction of water quality on-site. Specifically, these chemicals could leach into soils and affect groundwater, or into water bodies on-site (ponds, streams) during rain storms, causing degradation of receiving water quality. As discussed previously, Kellogg Creek below Los Vaqueros Reservoir, to which project areas are tributary, is included on the 2010 303(d) list for dissolved oxygen, salinity, sediment toxicity, and unknown toxicity. Pollution released from accidental spills on-site, if left unmitigated, could potentially contribute to the impairments along Kellogg Creek, and those described for the Delta, further downstream. This impact is considered potentially significant; however, implementation of Mitigation Measure 4.10-1 would reduce this effect to a less-than-significant level.

As discussed previously, lower Kellogg Creek is also included on the current 303(d) list if impaired water bodies for E. coli. E. coli is a bacteria commonly associated with human or animal feces. Implementation of the Project would not result in any changes to on-site ranching activities, and would not result in the discharge of untreated human wastes into surface water bodies. Therefore, implementation of the Project would not result in any change or increase in E. coli levels.

Potential impacts to water quality as a result of construction-related stormwater pollutants, including during the construction period, are discussed in Impact 4.10-3.

Potential changes in water quality related to drainage on-site are discussed in Impact 4.10-4.

DEIR pages 4.10-17 to 4.10-18:

Impact 4.10-3: Project construction and operation could alter drainage patterns on-site in a manner which could result in erosion, sedimentation, or flooding on-site or off site. (*Less-than-Significant Impact with Mitigation Incorporated*)

Erosion and Sedimentation

Construction of the Project would include the use of heavy machinery, including but not limited to transport trucks, bulldozers, graders, backhoes, and cranes. Use of these and similar types of heavy machinery would cause disturbance to surface sediments, loosen soils, remove existing vegetation, and potentially result in increased erosion on-site. During large storm events, eroded soils could become entrained in stormwater, and could cause sedimentation on-site or downstream, including along Project area waterways. ~~At the staging areas (approximately 3 acres,) and laydown areas (the existing O&M building would be razed and the area of the building and the parking lot would be used as the laydown area)~~ also could generate substantial sediment loads during storm events, if improperly managed. Increases in sediment loading, if left unmanaged, could potentially contribute to water quality impairments along downstream reaches of Kellogg Creek and the Delta. During Project operations, if improperly managed, stormwater control measures along the proposed roadways, substation, and other proposed facilities could result in the discharge of stormwater into inadequately sized drainages, or in a manner that would result in additional erosion and sedimentation. The Project would include removal of some existing roadways which, as discussed, currently create various erosion-related problems in some areas. If reclaimed roadways are not properly managed, additional erosion could occur. Installation the proposed new roads, stream crossings/culverts, wind turbines, upgraded power substation, temporary trenches for on-site power lines, the new O&M building, and other proposed facilities, as well as temporary facilities such as crane pad and laydown areas, would involve digging, grading, and earth-moving. If improperly managed, these activities could result in changes in drainage patterns on-site, which could lead to increased incidence of erosion, sedimentation, and flooding on-site or downstream. For instance, unless properly managed, stormwater runoff along new roadways could cut erosional channels, resulting in erosion along the roadways, and sedimentation downstream.

For the construction period, the Project would be required to acquire coverage under the County's General Construction NPDES Permit issued by the CVRWQCB. As discussed previously, conditions of this permit would require adherence to a series of Best Management Practices, as well as other measures, to control potential erosion and sedimentation and address water quality issues associated with Project construction. To ensure that stormwater control facilities were designed to minimize

erosion and sedimentation, implementation of Mitigation Measures 4.10-3a and 4.10-3b also would be required.

DEIR pages 4.10-21 to 4.10-22:

Impact 4.10-4: The Project could create or contribute additional runoff water, which could exceed the capacity of drainage systems, and could create additional sources of polluted runoff. (*Less-than-Significant Impact with Mitigation Incorporated*)

Approximate disturbance and restoration acreage associated with Project components is presented in Project Description Table 3-4. Project implementation would result in the permanent disturbance of 11 acres, temporary disturbance of 93.1 acres, and restoration of 29.1 acres. Overall, there would be no net increase of impervious surfaces. Impervious surfaces include paved roadways, concrete transformer and turbine pads/foundations, and other areas that do not permit the infiltration of stormwater. During a storm event, impervious surfaces generate additional stormwater runoff, as compared to pervious surfaces. If improperly managed, this additional stormwater runoff could be channeled into existing drainages and natural waterways, contributing to or exacerbating flooding on-site and downstream of the impervious surfaces.

These roadways are to be composed of gravel and, as such, are not considered impervious surfaces. However, the proposed unpaved roadways would be hard-compacted; while not classified as impervious, would still result in reduced permeability for stormwater infiltration, as compared to existing conditions. Therefore, during a storm event these surfaces could generate additional stormwater runoff, as compared to existing surfaces. If improperly managed, this additional stormwater runoff could be channeled into existing drainages and natural waterways, contributing to or exacerbating flooding on-site and downstream. Additionally, the proposed roadways could collect oil, grease, brake dust, sediment, and other potential pollutants deposited by maintenance vehicles. During a storm, especially during the first major storm of the season, these potential pollutants can become entrained in stormwater, migrate into natural waters, and result in water quality degradation on-site or downstream. These impacts, including potential increases in the volume of stormwater discharged from the Project area, and potential increases in pollutants emanating from the proposed roadways, are potentially significant. Discharges of pollutants into downstream waterways could contribute to unknown toxicity along lower Kellogg Creek and the Delta, if left unmitigated. However, implementation of Mitigation Measures 4.10-3a and 4.10-3b would reduce these impacts to less-than-significant levels.

The influx of vehicles and equipment at the Project area during construction, along with the construction processes themselves, would increase the likelihood of accidental releases of fuels, oils, lubricants, antifreeze, and other hazardous fluids and compounds into the environment. During storm events, these pollutants could

become entrained in stormwater flows and degrade water quality downstream, potentially contributing to unknown toxicity along lower Kellogg Creek and the Delta, if left unmitigated. Discharges from the temporary cement plant identified in Chapter 3, *Project Description*, including truck washout and other concrete washout, would be channeled into an on-site, aboveground settling pond. If improperly managed, pollutant-containing water accidentally could be released from this pond. Such releases could become entrained in natural waterways, resulting in degradation of downstream water quality. The construction-related impacts to water quality are potentially significant, but would be mitigated to less-than-significant levels through implementation of Mitigation Measures 4.10-3a and 4.10-3b. For a discussion of potential releases of hazardous materials during construction, and the potential for exposure of Project workers, personnel, and the public at large to such chemicals, please refer to Section 4.9, Hazards and Hazardous Materials, Impact 4.9-1.

DEIR page 9-15:

Central Valley Regional Water Quality Control Board (CVRWQCB), 2009. *Fourth Edition of the Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins*. Updated September 4, 2009.

Central Valley Regional Water Quality Control Board (CVRWQCB), 2010. 2010 Integrated Report (Clean Water Act Section 303(d) List/305(b) Report). Available at: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml Accessed on July 11, 2011.

CH2MHill, 2002. Contra Costa Water District Sanitary Survey Update, prepared for Contra Costa Water District, May 2002.

Contra Costa County, 2010. *Contra Costa County General Plan 2005-2020*. Published January 18, 2005; reprinted July 2010.

Contra Costa Water District (CCWD), 2009. *Los Vaqueros Reservoir Expansion Project, Environmental Impact Statement, Environmental Impact Report*. State Clearinghouse No. 2006012037, February, 2009. Available at: <http://www.lvstudies.com/documents.asp> Accessed on April 12, 2010.

California Department of Water Resources (DWR), 2003. *California's Groundwater, Bulletin 118, Update 2003* California Department of Water Resources.

~~US Environmental Protection Agency (USEPA), 2006. 2006 Clean Water Act List of Water Quality Limited Segments Requiring TMDLs. Available at: http://www.swrcb.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/state_06_303d_reqtmdls.pdf Accessed on April 12, 2010.~~

US Geological Survey (USGS), 2010. *Groundwater Levels for the Nation*. Online Database. Available at: <http://nwis.waterdata.usgs.gov/nwis> Accessed on April 12, 2010; Well numbers: USGS 374708121460101 002S002E04M001M; USGS 374816121443601 001S002E34F001M; USGS 374817121442501 001S002E34G001M; USGS 374827121442101 001S002E34B001M

The CVRWQCB also commented that the FEIR should provide additional discussion regarding consistency with the Basin Plan. Analysis contained in the DEIR for Impacts 10.4-1, 10.4-3, and 10.4-4 consider and are based on the requirements of the Basin Plan. However, the following updates to these sections have been made in order to clarify the role of the Basin Plan in analysis of potential hydrologic resources impacts.

DEIR page 4.10-14:

f) Would the Project otherwise substantially degrade water quality?

As discussed previously, the Project area is currently used for ranching operations, particularly cattle grazing, in addition to the existing wind energy facility. This is the only on-site activity aside from wind energy production that has potential to degrade water quality. Such degradation may include heightened erosion and sedimentation resulting from direct physical disturbance of waterways, as well as increased microbial and nutrient loading. However, on-site ranching is conducted by an entity separate from the Applicant and implementation of the Project would not result in long-term alteration or interference with ranching operations. Therefore, the Project would not otherwise degrade water quality, and would not interfere with water quality objectives or beneficial uses contained in the Basin Plan.

DEIR page 4.10-15:

Accidental spill or release of these or other equipment-related water quality pollutants could result in a reduction of water quality on-site. Specifically, these chemicals could leach into soils and affect groundwater, or into water bodies on-site (ponds, streams) during rain storms, causing degradation of receiving-water quality and potentially resulting in interference with water quality objectives and associated beneficial uses, as set forth in the Basin Plan. This impact is considered potentially significant, however, implementation of Mitigation Measure 4.10-1 would reduce this effect to a less-than-significant level, and would further ensure that water quality objectives and beneficial uses, as described previously, would be met and protected.

DEIR pages 4.10-21 to 4.10-22:

These roadways are to be composed of gravel and, as such, are not considered impervious surfaces. However, the proposed unpaved roadways would be hard-compacted; while not classified as impervious, would still result in reduced permeability for stormwater infiltration, as compared to existing conditions. Therefore, during a storm event these surfaces could generate additional stormwater runoff, as compared to existing surfaces. If improperly managed, this additional stormwater runoff could be channeled into existing drainages and natural waterways, contributing to or exacerbating flooding on-site and downstream. Additionally, the proposed roadways could collect oil, grease, brake dust, sediment, and other potential pollutants deposited by maintenance vehicles. During a storm, especially during the first major storm of the season, these potential pollutants can become entrained in

stormwater, migrate into natural waters, and result in water quality degradation on-site or downstream. Unless mitigated, the migration of such pollutants into natural waters could result in interference with water quality objectives and beneficial uses, as set forth in the Basin Plan, as discussed previously. These impacts, including potential increases in the volume of stormwater discharged from the Project area, and potential increases in pollutants emanating from the proposed roadways, are potentially significant. However, implementation of Mitigation Measures 4.10-3a and 4.10-3b would reduce these impacts to less-than-significant levels, and would ensure that water quality objectives and beneficial uses would be protected.

2.3 Individual Responses

This section includes the letters received, with individual comments delineated as indicated above, followed by responses to each comment.



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Re: Comments on Draft Environmental Impact Report for the Proposed Tres Vaqueros Windfarm Project (File No. LP09-2005/State Clearinghouse No. 2009032077)

Dear Mr. Nelson:

The Contra Costa Water District (CCWD or District) is in receipt of a request for comments on the Draft Environmental Impact Report (DEIR) for the Tres Vaqueros Windfarm Project in Contra Costa County. CCWD is concerned with the adequacy of the DEIR in the following areas:

- Repowering Project and Alternatives
- Distance of Turbines from Los Vaqueros Dam & Watershed Property
- Visual Impacts
- Noise Impacts
- Construction Water & Fire Risk Impacts
- Cultural Resources Impacts

CCWD understands that Tres Vaqueros Windfarms, LLC is the applicant seeking approval of the Project. The Contra Costa County Department of Conservation & Development has issued the Tres Vaqueros Windfarm Project DEIR to document the impacts of repowering an existing windfarm that is on CCWD Los Vaqueros Watershed property (1,449 acres accommodating up to 12 proposed turbines) as well as the Vasco Caves Regional Preserve (1,215 acres also accommodating up to 12 proposed turbines) partially owned by CCWD and East Bay Regional Park District (EBRPD) and managed by EBRPD. The proposed Project seeks to remove all 91 of the existing 90 to 174-foot high wind turbine generators (WTG) which are now all located on EBRPD property. The new turbines would be either Gamesa G90 2.0 megawatt (MW) turbines or Siemens 2.3 MW turbines with a total height of up to 429 feet (with the blade tip at the 12 o'clock position). The capacity would expand from the current 29.1 MW to 42 MW and increase energy capacity by approximately 38 percent.

A-1

Also included in the proposed Project are: upgrade and expansion of the existing substation; construction of new on-site gravel roads providing access to the turbine pads; roadway improvements at one access point along Vasco Road; and reclamation of existing turbine pads and access roads not reused as part of the project.

The specific comments reflect CCWD's concerns with inadequately addressed or unaddressed significant and potentially significant environmental impacts to the Los Vaqueros Watershed and Los Vaqueros Reservoir.

↑
A-1

1. Repowering Project and Alternatives

The proposed Project consists of both “repowering” of existing turbines and expanding total capacity. The Buena Vista Repowering Project and the Vasco Wind Repowering project, both recently approved Contra Costa County wind projects, did not seek to expand their existing generating capacity. The proposed Project expands the capacity of the existing Tres Vaqueros Windfarm from 29.1 MW to 42 MW.

Section 5 of the Executive Summary presents the no project alternative and six additional alternatives including alternatives 3A and 3B. Alternative 2 is the repowering project (although it is labeled “partial repowering”) in that it replaces the old turbine capacity of 29.1 MW with new modern turbine capacity of 29.1 MW and does not expand capacity. Only 13 to 15 of the 24 turbine sites would be required. This section further presumes that some portion of all of the turbine strings would be used. CCWD believes that prudent planning of turbine locations could eliminate many sites on CCWD property should this alternative be selected, thereby reducing impacts to the Los Vaqueros Watershed and Reservoir.

↑
A-2
↓

Specifically, CCWD recommends eliminating turbine sites F1, F2, F3, F4, C1, C3, C4, A1, and A3 to avoid significant environmental impacts, including visual and cultural resources impacts. This would leave 15 sites and, if the larger 2.3 MW turbines were employed, this would generate 34.5 MW of capacity - an increase of 5.4 MW or 18.6% over the existing capacity. Eliminating sites B1 and B2 as well would leave 13 sites, however, utilizing 2.3 MW WTGs would result in 29.9 MW, approximately a 0.8 MW increase from the current 29.1 MW generating capacity.

Alternatives 3A and 3B are presented due to potential significant impacts to cultural resources and visual impacts respectively. Alternative 3A eliminates sites A1 and A3 due to cultural resources concerns. CCWD agrees that cultural resources could be significantly adversely impacted at these locations and that it would prudent to avoid these impacts. Further, the potential exists for significant impacts to yet undiscovered cultural resources along other turbine strings. As noted above,

prudent planning could eliminate entirely some turbine strings, thereby reducing the potential significant impacts to the numerous cultural resources of the area.

Additionally, Alternative 3B eliminates three of the four F string turbines, in particular, F1 through F3. These sites are the closest to the Los Vaqueros Reservoir itself and there are significant unavoidable impacts due to turbines at these locations as described in Section 5.1. Site F4 is also very visually prominent throughout the watershed. CCWD recommends that the A and F strings (F1 through F4) both be eliminated in their entirety to avoid these significant impacts, leaving 18 turbine sites. Using the 2.3 MW WTGs, this would result in approximately 41.4 MW of generating capacity, an increase of 42.3% from the original 29.1 MW capacity.

2. Distance of Turbines from Los Vaqueros Dam & Watershed Property

As described in the Section 4.15 of the Draft EIS/EIR prepared for the Los Vaqueros Reservoir Expansion Project:

“...the Los Vaqueros Watershed provides day-use opportunities for hiking, biking, boating, fishing, and horseback riding...The watershed has more than 39.2 miles of hiking-only trails, and about another 15.8 miles of multi-use trails. Hiking-only trails align the west side of the reservoir and extend north and south of the reservoir through the watershed. No public access is provided along the east side of the reservoir. ”¹

Upon review the turbine locations on the project map (Figure 3-2C in the DEIR), it appears that 9 of the proposed turbines are sited near to where existing turbines are located and the remaining 15 turbines are proposed for lands where turbines have not been located before and are to be located closer to the Los Vaqueros Reservoir and Watershed. There is an abundance of Los Vaqueros Reservoir and Watershed recreational facilities in close proximity to the location of the proposed turbine sites. CCWD is concerned about the adverse impacts of these large wind towers sited so near to the Reservoir, the Los Vaqueros Dam, and the Interpretive Center; and within the view corridors of hiking and multi-use trails, boaters, the Interpretive Center and other public vantage points on the west, south and north sides of the Reservoir as well as on the Reservoir itself. CCWD believes turbines sited at these new locations results in significant and unmitigated environmental impacts and that some, or all, these turbines should be relocated or eliminated to mitigate and avoid these impacts.

¹ Los Vaqueros Reservoir Expansion Project Draft EIS/EIR, U.S. Department of the Interior, Bureau of Reclamation, Mid-Pacific Region, Contra Costa Water District, and Western Area Power Administration, February 2009.



A-3

In addition, the siting of locations F1, F2, and F3 appears to create a significant danger to the Los Vaqueros Dam and control facilities in the event of a “blade throw” event. Figure 4.9-1 in the DEIR does not provide a specific blade throw distance for each WTG but the “blade throw setback area” shown includes portions of the Los Vaqueros Dam and associated facilities including the Intake Structure Control Building, Oxygenation System, Intake piping and valves, access road, and parking area. While such incidents may be rare, the potential for significant injury or death to CCWD personnel working on or around the endangered dam facilities and the threat of damage to these critical facilities must be considered in siting. In addition, the Los Vaqueros Reservoir Expansion Project EIS/EIR also considered additional alternatives, including further expansion of the Reservoir, and the expanded footprint of the Los Vaqueros Dam and Reservoir was not considered in the Tres Vaqueros Windfarm Project DEIR. The DEIR must consider and fully mitigate the dangers to the Los Vaqueros Dam and other critical facilities, both as presently constructed/under construction, as well as those that have been identified for possible future construction. Damage to critical control structures, or the Los Vaqueros Dam itself, could result in significant environmental impacts downstream of the Reservoir.

A-4

3. Visual Impacts

The massive size and prominence of the proposed turbines will overwhelm the scenic and recreational uses and amenities surrounding the Reservoir, including the Interpretive Center and Los Vaqueros Dam, the Los Vaqueros Marina Complex, and the hiking trails on the west side of the Reservoir. Instead of 24 turbines, CCWD proposes a total of 17 turbine locations - eliminating seven turbine locations (F1, F2, F3, F4 and C1, C3, and C4) as shown on the attached map. The elimination of turbine locations F1 through F4 would reduce the visual impacts at the Dam, Interpretive Center, and recreation facilities. The elimination of turbine locations C1, C3, and C4 would reduce visual impacts at the watershed office. With 17 locations remaining, the use of the 2.3 MW WTGs would provide for approximately 39.1 MW of generating capacity. Given that the DEIR acknowledges the severity of the visual impacts of such large wind towers, it will be necessary to redo the viewpoints (11, 12, 13, 14, and 15) showing the removal of wind turbines that CCWD believes will cause severe visual impacts.

A-5

Alternative 3B (Project Without Full F-String) partially responds to CCWD’s concerns over the significant visual impacts from tower locations F1, F2, F3, F4, and C1, C3, and C4. The reduction of turbine sites to 14 or 15 turbines in total, as proposed in Alternative 2, would also provide a reduction in visual impacts as discussed above. A combination of Alternatives 2 and 3B should be considered to reduce the proposed project’s significant visual impacts.

A-6

CCWD also believes that further consideration of the paint color is required. For example, would painting the turbines a blue/buff iridescent paint color be preferable to white? The DEIR should provide more information on possible paint schemes and colors for mitigating the visual impacts of the new turbines. Mitigation measure 4.1-2 should be modified to allow more time and additional options for consideration of the color that the wind turbines would be painted. CCWD should be included as an approving agency for the choice of turbine paint scheme and color.



4. Noise Impacts

The DEIR states incorrectly that there would be no noise impacts on recreational users because the noise impacts from turbine operations would fall within the "normally acceptable" standard for land use compatibility established by the Contra Costa County General Plan (60 dBA Ldn for the most noise-sensitive land uses). It fails to adequately evaluate, however, that the tower locations are proposed for a pristine natural environment where ambient noise levels are very low. Data from EIRs on similar projects show noise impacts at the base of tower locations on hilltops reaching as high as 73-74 dBA Ldn.² The project must address the impact, both singular and cumulative, of the siting of the WTGs within this pristine natural environment.



A-7

5. Construction Water & Fire Risk Impacts

Section 3.4.2 of the DEIR states that approximately 8.2 million gallons of construction water will be required during construction and decommissioning activities and will be acquired from the Byron Bethany Irrigation District and trucked to the project location. Three water truck deliveries per day are assumed. Based on the recent Vasco Winds EIR significantly more construction water may be needed, resulting in a larger number of water truck delivery trips during construction and decommissioning. The stated construction and decommissioning water supply requirements also appears inadequate to address fire protection needs as discussed below.



A-8

As the DEIR states in Section 4.9.2.1, *Regional and Local Setting*:

“the Project is located within “Moderate” and “High” fire hazard severity zones (CalFire, 2007). Regulations require fire safety measures during the high fire season. Project construction and decommissioning of the existing wind energy facility would occur over approximately 12 months and could occur during the high

² Draft EIR, Vasco Winds Repowering Project, Contra Costa County, 2011.

fire season. Because Project construction activities would include welding, refueling, and use of fuel-motorized equipment in a predominantly grassland environment, Project construction could expose people and structures to wildland fires. This is a significant impact that would be reduced to a less-than-significant level through implementation of Mitigation Measure 4.9-5.”

Mitigation Measure 4.9-5 requires that:

“Prior to commencement of construction activities, the Applicant shall submit a Fire Safety Plan to, and obtain approval from, CalFire and the Contra Costa County Fire Protection District. The Applicant shall submit the approved plan to the County Zoning Administrator. The measures contained in the approved plan shall be strictly enforced. The Fire Safety Plan shall describe on-site BMPs to reduce the potential for accidental fires which shall include, but not necessarily be limited to, the following (unless deemed unnecessary or modified by CalFire or the Fire Protection District):

- 1) All equipment used during construction must have an approved spark arrestor.
- 2) Fire-suppression equipment and tools shall be readily available at all work locations and workers shall be trained in their use.
- 3) Construction workers will receive fire hazard training to identify actions that will reduce the risk of ignition and facilitate immediate control of an incipient fire. The training shall also include emergency communication protocols.
- 4) Adequate water supplies for fire prevention shall be maintained at all times.”

As the owner of 1,449 acres of land subject to wildland fires and impacted by the proposed project, CCWD believes this mitigation measure is insufficient and inadequate to properly mitigate for potential accidental fires. The Project area lies within the jurisdiction of the East Contra Costa Fire Protection District. The nearest ECCFPD facility (Station No. 57) is in Byron. The nearest CalFire facility (Sunshine Station No. 16) is in Clayton. Specifically, “adequate water supplies” needs further quantitative definition. How many gallons would be required to suppress a wildland fire before outside fire-fighting equipment arrives onsite in response to an emergency? How would such water supplies be stored during the construction period and what equipment would be kept on site during construction for actual fire suppression before ECCFPD and/or CalFire arrive onsite in response to an emergency? Prior to submittal of the Fire Safety Plan for approval, the Applicant should be required to submit the Plan to CCWD and to respond in writing to CCWD’s comments and recommendations.

6. Cultural Resources Impacts

The Los Vaqueros Watershed lands are included in the Kellogg Creek National Historic District. The Watershed includes many historic and pre-historic sites that are protected by CCWD. Several of these sites are located in close proximity to turbine locations A1 and A3 as well as the “Laydown Area” shown on Figure 3-2c in the DEIR. Based on the sacred and unique historic value of these sites, CCWD believes that no new roads, Laydown Area or WTGs should be installed in areas that would encourage access in the vicinity of the sites and potentially lead to damage, vandalism or theft. CCWD recommends eliminating turbine locations A1 and A3 as well as the associated access road and relocating the Laydown Area to an area completely out of view of any cultural sites. CCWD recommends that all cultural resources work and all coordination with Native American representatives be coordinated through CCWD staff to ensure consistency with the “Memorandum of Agreement among the Bureau of Reclamation, U.S. Army Corps of Engineers, the Contra Costa Water District, and the California State Historic Preservation Officer Regarding the Resolution of Adverse Effects to Historic Properties from the Expansion of the Los Vaqueros Reservoir, Contra Costa County, California” executed in March 2011.

A-9

Conclusion

The proposed Project is proposing to increase windfarm generating capacity from 29.1 MW to 42 MW and to expand the project footprint onto 1,449 acres owned by CCWD. The project consists of both a repowering project and an expansion project versus simply a repowering project. As currently composed, the DEIR inadequately addresses the issues cited in detail above. CCWD believes that turbine locations F1 through F4, A1, A3, C1, C3, and C4 can and should be eliminated to avoid significant impacts. Elimination can be accomplished in a manner that still meets the project’s stated purpose and objective, and would still result in an expansion of capacity from 29.1 MW to 34.5 MW on 15 sites while reducing impacts to the Los Vaqueros Watershed. Elimination of these 9 sites improves the cumulative visual and noise impacts on recreational activities in and around the Reservoir and Watershed and keeps turbines at a safe distance from the Los Vaqueros Dam. Additionally, this configuration avoids potential significant impacts to known and unknown sensitive cultural resources. CCWD is a significant landowner and is agency responsible for the Los Vaqueros Project. Pattern Energy has requested that an agreement be executed by CCWD for roadway access. Before that agreement can be completed, turbine locations must be established and CCWD must be in agreement with the proposed locations.

A-10

William Nelson
Contra Costa County Department of Conservation & Development
Tres Vaqueros Windfarm Project
July 19, 2011
Page 8

CCWD will require that the EIR for the project be certified. CCWD will require that CCWD be provided time to review, prior to their issuance, all permits from pertinent regulatory agencies, particularly the United States Fish & Wildlife Service and California Department of Fish & Game, to ensure that sensitive habitats and protected species within the watershed are fully protected in a manner consistent with CCWD's existing obligations to these and other agencies. Further, CCWD will require that the Watershed is adequately protected from fire hazards.

A-11

Please feel free to contact me at (925) 688-8018 or Mark Seedall at (925) 688-8119 should you have questions.

Sincerely,



Marguerite Naillon
Special Projects Manager

MN/MS/jmt:wec

2.3.1 Letter A – Responses to Comments from Contra Costa Water District (CCWD)

- A-1 This comment does not address any concern or issue specifically related to the accuracy or adequacy of the DEIR. This comment is noted.
- A-2 The County notes the commenter’s assertion that, under Alternative 2, prudent planning of turbine locations could eliminate many sites on CCWD property should this alternative be selected.

The commenter recommends eliminating turbine sites F1, F2, F3, F4, C1, C3, C4, A1 and A3 to reduce significant environmental impacts to visual and cultural resources. The County agrees with the commenter’s assertion that the elimination of turbine sites A1 and A3 would reduce impacts to cultural resources, a scenario analyzed under Alternative 3A in the DEIR (page 6-17), and that elimination of F1, F2, F3, and F4 would reduce impacts to visual resources, a scenario analyzed under Alternative 3B in the DEIR (page 6-17 to 6-18).

The County finds the CCWD recommendations for elimination of turbines in the C and F-strings contradictory to statements made by CCWD in 1993, during the condemnation process for the Los Vaqueros Reservoir project. During this process CCWD argued for, and won, condemnation of Vaqueros Farms property by arguing that wind energy was a valid and compatible use of some of the very same lands on which the proposed C and F-strings are now proposed to be constructed. However, CCWD now finds repowering an existing windfarm on these lands as negatively impacting the Los Vaqueros Watershed and Reservoir. Furthermore, the Applicant holds the wind rights for these lands, which includes the right construct turbines upon them.

In response to comments received on the DEIR from this commenter and others, the County has worked with the Applicant to prepare an new alternative now referred as the Environmentally Preferred Alternative (see Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*), the development of which took into account impacts to visual, cultural, and biological resources, as well as other critical factors such as hydrology. Under the Environmentally Preferred Alternative six turbine locations would be eliminated (A1, A3, B4, B6, D5 and E1) and one new location would be added (E5). For an analysis the commenter’s concerns regarding impacts to cultural resources from this alternative, see Response A-9.

For visual resources, the construction-related impacts of the Environmentally Preferred Alternative would be similar to or less than the Project. Like the Project, this alternative would result in construction activities near recreational areas and scenic roadways, though implementation of Mitigation Measure 4.1-1 would reduce construction-related visual impacts from scenic vistas to a less-than-significant level, and construction impacts to scenic roads would remain less than significant.

Operation and maintenance-related impacts to scenic vistas would be slightly less than with the Project. The Environmentally Preferred Alternative would result in two fewer turbines on the western side of the Project area (A1 and A3), and two fewer turbines near the center of the Project area (B4 and B6), slightly lessening the visual perception of turbine presence from several scenic vistas. Figures 2.2.1-3a, 2.2.1-3b, and 2.2.1-3c show visual simulations of the Environmentally Preferred Alternative from scenic vistas including the Los Vaqueros Reservoir Vista Grande Trail, the Los Vaqueros Shoreline Trail, and the marina at Los Vaqueros Reservoir. Figures 2.2.1-3d and 2.2.1-3e show visual simulations of the cumulative effects of constructing both the Environmentally Preferred Alternative and the neighboring Vasco Winds Repowering Project, from viewpoints on the Upper Whipsnake Trail east of Morgan Territory Regional Preserve and from the marina at Los Vaqueros Reservoir. Compared to simulations of the Project from these same viewpoints in the DEIR (Figures 4.1-7, 4.1-8, 4.1-9, 5-2 and 5-3, respectively), visual impacts of the Environmentally Preferred Alternative from these locations would be slightly less than with the Project, because of the reduction in the total number of turbines from 21 to 19. Nevertheless, like the Project, impacts to scenic vistas would be significant, despite implementation of Mitigation Measure 4.1-1.

Figure 4.1-12 in the DEIR (page 4.1-36) shows a visual simulation of the Project from the Interpretive Center at Los Vaqueros Reservoir. The three turbines in the figure (F1, F2, and F3) would remain under the Environmentally Preferred Alternative; consequently, the Environmentally Preferred Alternative would have the same impact (significant and unavoidable) to the viewshed as the Project. Figure 2.2.1-3f shows visual simulations of the Environmentally Preferred Alternative from the Watershed Office at Los Vaqueros Reservoir. Compared to a simulation of the Project from this viewshed in the DEIR (Figure 4.1-10), approximately the same number of turbines would be visible under the Environmentally Preferred Alternative. As such, impacts would remain significant.

Like the Project, the Environmentally Preferred Alternative would not substantially degrade the existing visual character or quality of the Project area. Figure 2.2.1-3g shows a view of the Environmentally Preferred Alternative from within the Tres Vaqueros Windfarm (not a public viewing location). Compared to simulations of the Project from the same viewpoint (DEIR Figure 4.1-3), the Environmentally Preferred Alternative would have less impact on the character of the Project area as fewer turbines would be located on-site. Impacts would remain less than significant.

Like the Project, under the Environmentally Preferred Alternative impacts to scenic roads would be less than significant. Figures 2.2.1-3h and 2.2.1-3i show motorist's views of the Environmentally Preferred Alternative from Vasco Road 1.6 miles south and 3.3 miles south of the intersection with Camino Diablo, respectively. Compared with simulations from the same viewpoints for the Project in the DEIR (Figures 4.1-5 and 4.1-6), fewer turbines would be visible from Vasco Road, and impacts would remain less than significant.

This alternative would result in similar (less than significant) impacts related to light and glare, as it poses no changes to the Project lighting plan.

- A-3 The County agrees with the commenter's assertion that the Project would have significant and unmitigable impacts to viewsheds within the Los Vaqueros Watershed. Specifically, Section 4.1 of the DEIR, *Aesthetics*, finds that impacts to the following recreational viewsheds would be significant and unavoidable: Vista Grande Trail (page 4.1-42), Los Vaqueros Shoreline Trail (page 4.1-43), Marina (page 4.1-43), Los Vaqueros Watershed Office (page 4.1-44), and Los Vaqueros Interpretive Center (page 4.1-45). In addition, impacts to the Morgan Territory Regional Preserve were also found to be significant and unmitigable (page 4.1-46). The commenter further expresses the opinion that some, or all, of the 15 turbines proposed on lands where turbines have not been located before, and that would be closer to the Los Vaqueros Reservoir and Watershed, should be relocated or eliminated to mitigate and avoid these impacts. The commenter is referred to DEIR Chapter 6, *Alternatives Analysis*, which explores various turbine layouts. The No Project Alternative, Alternative 1, Alternative 2, and Alternative 3B were all found to have less impact to aesthetic resources than the Project.
- A-4 The commenter states that the DEIR does not consider and fully mitigate the potential dangers to the existing and possible future expansion of the Los Vaqueros Dam and associated facilities, as well as CCWD personnel working at these facilities, from a blade throw event at turbine locations F1, F2 and F3. The DEIR analyzes effects of the Project relative to actual physical conditions and not potential future development scenarios. Turbine locations F1, F2 and F3 are located 1,200 feet, 1,800 feet and 2,370 feet, respectively, from the nearest Los Vaqueros Dam facility, the intake structure control building. The intake structure control building would remain the closest facility to the proposed turbines under the various reservoir expansion alternatives presented in the Los Vaqueros Reservoir Expansion Project EIR/EIS; the dam itself would be at least 500 feet further away. As discussed in the DEIR on page 4.9-14, the maximum blade throw distance for a blade fragment from the proposed turbines is approximately 1,073 feet. Therefore, the nearest Los Vaqueros Dam facilities are slightly beyond the estimated throw distance from turbine location F1, and well outside of the throw distance from turbines F2 and F3. Because the Los Vaqueros Dam facilities would be located beyond the estimated blade throw distance of the turbines and considering the low probability of a failure causing a blade throw event, the DEIR adequately describes this impact as less than significant.
- A-5 See Responses A-2, A-3 and Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*.
- A-6 For a discussion of the removal of turbines F1, F2, F3, F4, C1, C3 and C4, the commenter is referred to Responses A-2, A-3 and Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*.

The commenter also requests that Mitigation Measure 4.1-2 be modified to allow more time and additional options for consideration of the color that wind turbines would be

painted, and that CCWD be included as an approving agency for the choice of turbine paint scheme and color. Mitigating the turbines' appearance through application of color is complicated by two factors. First, the turbines would be viewed from many different angles, so some viewers would see them against a background of sky while others would see them against a background of hills. This is demonstrated in DEIR Figures 4.1-4, 4.1-7, and 4.1-11, which depict views from Vasco Caves Regional Preserve, the Vista Grande Trail, and the Upper Whipsnake Trail, respectively. The second factor is that the color of the background hills cycles between light and dark.

The County considered different turbine colors and color applications for the Project and for the Vasco Winds Repowering Project, but rejected all as being ineffective except for light grey (RAL 7035). A yellowish-brown color best described as "wheat" was considered because it would blend well with the hillsides during the dry seasons. This color was rejected because it would contrast with the sky and with the hills once they turned green during the wet seasons. All dark hues were rejected because they would contrast with the sky and with the hills during dry seasons. Bluish hues similar to the sky were rejected because while they would blend better with the sky, they would contrast with the hillsides during all seasons. Multi-colored turbines were rejected because of the problem presented by different viewing angles. A turbine whose upper portion was painted blue to blend with the sky and whose lower portion was painted an earth tone to blend with the hills (during a particular portion of the year) would contrast differently with the background when viewed from above or below. When viewed from above, the blue portion would contrast with the hills, while when viewed from below the earth tone would contrast with the sky.

Considering the changing appearance of the hills and the various angles from which the turbines would be viewed, the County determined that the most effective mitigation would be application of a neutral color that was more muted than the standard stark white turbine color. Light grey was found to be the most appropriate color for this purpose.

- A-7 The DEIR does not state that there would be no impacts on recreational users because the noise impacts from turbine operations would fall within Contra Costa County's normally acceptable standards for land use compatibility. Impact 4.13-1 clearly states that impacts to the Vasco Caves caretaker residence and guided tour area would be less than significant because estimated turbine noise levels would be approximately the same as ambient conditions in the area (see DEIR page 4.13-13, second paragraph). For the purposes of the noise analysis, the Vasco Caves caretaker residence and Vasco Caves guided tour area are both considered to be recreational areas (see DEIR page 4.13-7, second paragraph).

The County does not dispute that ambient noise levels at the tower locations tend to be low (i.e., mid 40 dBA range away from Vasco Road; see DEIR page 4.13-6) or that noise levels at the base of the tower locations could reach as high as 73-74 dBA L_{dn} . However, there are no noise sensitive receptors at the locations proposed for the towers. For discussion of the Project and cumulative operational wind turbine noise impacts relative

to the closest sensitive receptor locations, including recreational areas, see Impact 4.13-1 (DEIR page 4.13-13) and Section 5.4.3.13 (DEIR page 5-24), respectively.

Figure 2.2.1-4 is presented in Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*, and shows new noise contours for the Environmentally Preferred Alternative. While the reduced number of turbines and the modifications to the turbine layout in the Environmentally Preferred Alternative necessarily result in changes to the noise contours, the similarities support the County's conclusion that the Environmentally Preferred Alternative would not cause a new or more significant noise related impact relative to what was analyzed in the DEIR. Because of the similarities, the DEIR's discussion of noise impacts is also applicable to Figure 2.2.1-4.

- A-8 The County notes the comment regarding construction water needs. See Response K-3, which provides the approximate water needs as estimated by the Applicant for 19 turbines. All water would be sourced from Byron Bethany Irrigation District.

Water for fire protection would also come from Byron Bethany Irrigation District, and would be stored onsite in a 10,000 gallon tank, most likely at the laydown area.

The commenter considers Mitigation Measure 4.9-5 insufficient and inadequate to properly mitigate for potential accidental fires. Mitigation Measure 4.9-5 requires that the Applicant prepare a Fire Safety Plan and receive approval from CalFire and the Contra Costa County Fire Protection District (CCCPCD) prior to construction. The mitigation measure requires that the plan describe best management practices (BMPs) to reduce the potential for accidental fires and stipulates that "adequate water supplies for fire prevention shall be maintained at all times." The mitigation measure does not identify all BMPs that should be included nor quantify "adequate" water supplies; rather, the measure requires that fire-fighting professionals make these determinations, in accordance with their regulatory oversight of the Project.

CalFire and CCCPCD are responsible for engineering and plan review for fire safety. These agencies recently approved the Site Specific Plan for Fire Protection and Fire Prevention for the adjacent Vasco Winds Repowering Project (Nextera Energy Resources – Blattner Energy Inc., 2011). This plan specifies the fire protection capabilities and response times for the project. It requires that the project be equipped with five 4,000-gallon water trucks with a 50-foot fast response hose with fog nozzles. Additional details and procedures are set forth within the plan. The Project would be subject to similar plan review and fire safety requirements as the Vasco Winds Repowering Project, and it is presumed that implementation of a Fire Safety Plan approved by CalFire and CCCPCD would be sufficient and adequate mitigation to reduce the potential for accidental fires to a less-than-significant level.

The commenter asserts that the Applicant should be required to submit its Fire Safety Plan to CCWD. The County will forward a copy of the Plan to CCWD and consider comments, but it will not require CCWD's approval of the Plan.

A-9 The commenter recommends eliminating turbine locations A1 and A3 as well as the associated access road. The elimination of the A-string turbines was analyzed in the DEIR as Alternative 3A. As discussed on page 6-17, Alternative 3A would have the same impacts as the Project during decommissioning and removal of the existing turbines. However, Alternative 3A would have a reduced impact on the setting of three prehistoric rock shelters and one historic-period tenant farm location. Mitigation required under the Project to protect these resources would not be necessary, and overall impacts would be less than the Project. The commenter is further referred to Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*, under which turbines A1 and A3 and associated access roads would be eliminated.

The commenter also recommends relocating the construction laydown area to an area out of view of any cultural sites. The construction laydown area / new O&M building would be located at the site of the current O&M building. Construction of the new O&M building in the same location as the existing building would not change the baseline condition as the site is previously disturbed; furthermore, use of the area for staging would be temporary. No direct impacts to cultural resources would occur from the continued use of this location. Furthermore, under implementation of DEIR Mitigation Measures 4.5-2e (page 4.5-15), Project personnel, including construction crews, would be alerted to the archaeological sensitivity of the Project area and the importance of protecting cultural resources, and would be trained to identify and protect cultural resources in the event that they are inadvertently unearthed.

The commenter further recommends that all cultural resources work and all coordination with Native American representatives be coordinated through CCWD staff to ensure consistency with the “Memorandum of Agreement among the Bureau of Reclamation, U.S. Army Corps of Engineers, the Contra Costa Water District, and the California State Historic Preservation Officer Regarding the Resolution of Adverse Effects to Historic Properties from the Expansion of the Los Vaqueros Reservoir, Contra Costa County, California” executed in March 2011. The County acknowledges this request and notes that this memorandum of agreement is specific to the expansion of the Los Vaqueros Reservoir and does not mandate activities within the watershed that are not related to that specific project.

A-10 See Responses, A-2, A-3, A-4, A-7, A-9, and Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*. Note that a voluntary access agreement, such as is referred to by the commenter, between CCWD and Pattern Energy is not a CEQA issue, and as such no change has been made to the DEIR.

A-11 Comment noted. The County recommends that the commenter confer with CDFG and USFWS to review applicable permits prior to their issuance. See Response A-8 regarding fire hazards and safety.



July 19, 2011

Will Nelson
Department of Conservation & Development
Contra Costa County
651 Pine Street, 4th floor, north wing
Martinez, CA 94533-0095

Subject: Comments on Draft EIR for Tres Vaqueros Windfarm Project

Dear Mr. Nelson,

Thank you for providing the East Bay Regional Park District ("District") with a copy of the draft Environmental Impact Report (DEIR) for the proposed Tres Vaqueros Repowering Project ("Project") in eastern Contra Costa County. As you are aware, the proposed Project is primarily located on property owned by the District and managed as part of Vasco Caves Regional Preserve ("Preserve").

We are generally supportive of the proposed repowering project. However, the DEIR disclosed some new information about potential impacts to parkland. We request the following mitigation measures for these impacts:

- Prohibit weekend construction use of Howden Road.
- Relocate one park resident due to temporary air quality impacts.
- Mitigate erosion and water quality impacts to the drainage adjacent to O&M facility.
- Mitigate for the individual and cumulative impacts to wildlife. This could consist of acquisition of adjacent suitable habitat, retiring old wind projects and habitat enhancement.
- Select Alternative 3A because this would eliminate turbines A1 and A3.

We have enclosed detailed comments on the DEIR. Please call me at (510) 544-2622 should you have any questions regarding our comments and the attached supporting information.

Sincerely,

Brad Olson
Environmental Programs Manager

Enclosures (5)

Board of Directors

Beverly Lane President Ward 6	Carol Severin Vice-President Ward 3	John Sutter Treasurer Ward 2	Ayn Wieskamp Secretary Ward 5	2-72 Whitney Dotson Ward 1	Doug Siden Ward 4	Ted Radke Ward 7	Robert E. Doyle General Manager
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**Tres Vaqueros Wind Farm Project
Draft Environmental Impact Report (DEIR)**

Comments by East Bay Regional Park District (District)

July 19, 2011

A. Project Summary and Description

1. Please note that with the exception of the CCWD property at the west end of the project area, the remainder of the project area is within Vasco Caves Regional Preserve ("Preserve"). The "original" preserve consists of 772 acres acquired in 1997 (jointly owned with CCWD); 2,791 additional acres have been acquired between 2004 and 2010 (in partnership with the East Contra Costa County Habitat Conservancy). The Preserve totals 3,563 acres.
2. There are numerous references in Chapters 3 and 4 to "private property" within the project area. While there are private wind rights and conservation easements, we are not aware of private property that would be affected by the proposed project. These references may be an artifact from the original project application where at that time a large portion of the project areas was privately owned. It is our understanding that all of the land within the project area is now in public ownership. Figure 3-2c depicting property ownership appears to be correct.
3. The District also owns 1,600 acres at Byron Vernal Pools Preserve on the east side of Vasco Road. This preserve was acquired between 2009 and 2010. The repowered Buena Vista Wind Facility is located within this Preserve. We do not believe that this Preserve would be affected by the proposed project.
4. Section ES-7 "Areas of Controversy and Issues to be Resolved" on page ES-7 does not identify potential significant impacts to cultural resources as an areas of controversy. Potentially significant effects to cultural resources may occur during the construction and operation of the proposed project. This would include incidental discovery and collection of cultural artifacts, and potential trespass and resulting vandalism in sensitive areas of the Preserve where cultural resources are known to occur.
5. In Section 1.5, page 1-2, the DEIR should note that the District would rely upon the final EIR when considering a renewed or new lease for construction of wind turbine facilities within the Preserve.
6. Pages 3-17 and 3-19 note that a new septic system would be required for the O&M building. Why would a new system be required? What are the effects of leachate from the existing system and potential effects of this new system on downstream water quality?
7. Page 3-21 notes that the existing O&M site would be used as the project construction staging area. The existing facility would be demolished and grading would occur to

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establish the staging area. While the DEIR addresses on-site storm water runoff controls, it does not appear to address the specific downstream effects on wetlands. The watershed of this area contains some subtle grade changes that direct runoff into two stock ponds and a tributary to Brushy Creek. Creation of impervious surfaces and redirection of runoff could upset the fragile hydroperiod in the wetlands and riparian areas. The existing surface runoff and subsurface drainage from the O&M site should be clearly identified and the new facility should be located and constructed in a manner that does not change the hydrology of the area.

- 8. Page 3-22 states that some roads may be insloped to collect road runoff that would be directed by culvert underneath the road and discharged downslope. We do not believe that insloped roads are the best approach to managing roadway runoff. In some areas insloped roads actually promote erosion, resulting in gullies or standing water that undermines roadways and causes failures and slumps. Furthermore, insloped roads concentrate runoff into areas where water discharges downslope, causing significant erosion, as can be observed in the project area (see enclosed Figure 1). Energy dissipaters can address some of this concern; however, dissipaters have to be properly sized and closely monitored and maintained. In the project area, culverts have not proved to be an effective method of stormwater conveyance from roads. In our experience, outsloped roads address these problems (in most situations) because runoff sheet-flows across roads and does not promote road failure or downslope erosion.
- 9. In areas where underground power and communication lines will be buried beneath roads, we request that there be surface labeling and subsurface protection so that lines would not be accidentally severed by road maintenance activities.
- 10. On page 3-29 the DEIR notes that there is a "turnout for vehicle stacking," presumably from Vasco Road. What is the capacity of the stacking lane and how would the traffic control plan address traffic volume that exceeds stacking capacity?
- 11. Project "drive-by" inspections as described on page 3-31 should include property security, cultural resource protection and trash collection as routine activities.
- 12. The discussion of "Major Repairs and Component Replacement" on page 3-32 and 3-33 does not appear to identify road widening as necessary for providing large equipment and truck access to turbine sites. Would road widening be required? If so, how wide? Would roads be regraded to a 16 foot width post construction?



B. Visual Quality

- 1. On page 4.1-41 there is a discussion of potentially working with the District during project construction to minimize visual impacts to the Preserve. Perhaps the most visually sensitive time period would be when tours are being conducted within the Preserve, generally on weekends. A suitable mitigation measure would be to prohibit construction in certain visually prominent areas and prohibit construction vehicle use of

Howden Road on weekends. This would also minimize potential traffic conflicts with park visitors.



C. Air Quality

- 1. As noted above in comments A1, A2 and A3 the District now owns the majority of the project area (and CCWD the remainder). The DEIR makes note of four residents (i.e. sensitive receptors) within or adjacent to the project area. It is unclear which residents this may be in reference to. The District owns residences at four locations. These consist of 1) park security residence south of Howden Road; 2) grazing tenant residence on the former Martin Property, just west of Vasco Road; 3) grazing tenant residence on the former Souza property at Byron Vernal Pools Preserve west of Armstrong Road and east of Vasco Road; and 4) residence on the former Souza property at Byron Vernal Pools Preserve near the southern end of Armstrong Road on the east side of Vasco Road. The first three residences are currently occupied and would remain so during project construction. The fourth residence is vacant and would likely remain so during project construction.
- 2. Mitigation Measures 4.3-2a and 4.3-2b on pages 4.3-14 and 4.3-15 conclude that these measures will not fully mitigate project emissions of atmospheric oxides of Nitrogen (i.e. NOx) and that this impact would remain significant and unavoidable. On the contrary, we believe that this impact is avoidable and feasible mitigation measures could be implemented by temporary relocation of impacted park residents outside the project area during construction. The DEIR does not appear to provide specific information on which residents, where they are located or when these impacts would occur. Therefore we cannot provide more specific information.

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D. Biological Resources

- 1. Page 4.4-4 of the DEIR incorrectly states that the District has been acquiring HCP preserve lands since 2005. In actuality, HCP funds were first provided in 2009. All acquisitions prior to this date were funded by the District and other non-HCP sources. The District continues to acquire HCP preserve lands that are funded by the HCP Conservancy, District Measure WW Bonds and grants.
- 2. Figure 4.4-5 identifies occurrences of Swainson's Hawk north of the project area and does not appear to identify observations within the project area. Swainson's Hawk were observed and positively identified by Douglas Bell, PhD, of the District in the summer of 2009 within the northwest corner of the project area (pers. com.). The area is also actively used by Prairie Falcons which are observed on a regular basis (pers. obs.). Bald Eagles are seasonally present at Los Vaqueros Reservoir (pers. obs.). Northern harrier use and burrowing owl nesting use of project site are confirmed by EBRPD data (see PIER report CEC-500-2008-080). These occurrences should be noted on the figure.

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- 3. Mitigation Measure 4.4-1b contains provision “vii,d” that prohibits the relocation or permanent shut down of turbines that have a significantly greater level of impacts to birds when compared to other repowered turbines. As with the Vasco Winds Repowering Project, we believe that turbines should be relocated if they are found to have a significantly higher level of impact to birds. The District is supportive of repowering projects only if they significantly reduce avian mortality. By allowing this “out” the mitigation measure ultimately is ineffective. We also believe that the County should retain its future discretion to direct relocation of turbines that are killing high numbers of birds. B-18
- 4. Mitigation Measure 4.4-2 provision “ii, c” contains a provision for excavating and destroying unoccupied burrows within the project area. In general, the District does not allow this practice to occur on its parklands. Burrows not only provide habitat for burrowing owls they may also be used by tiger salamander, red legged frog, numerous reptiles, San Joaquin kit fox, American badger and other species. We request that any burrows that are destroyed be the minimum necessary to construct the project. Other burrows can be fitted with one-way doors, visually inspected by remote camera to confirm the absence of animals, and then covered until construction is complete. This would help to minimize what would otherwise be a significant cumulative effect on burrowing animals within the project area. B-19
- 5. Mitigation Measure 4.4-1b, provision “i” states “post construction monitoring shall commence no later than 3 months after the commercial operation date of the project.” This should be changed to “Shall commence upon the commercial operation date of the project, with a pre-monitoring fatality search of the site immediately prior to the commercial operation date of the project.” This will enable assessment of start-up impacts to birds that are naïve to operational turbines and allow for fatality monitoring period that coincides with operational turbines. The pre-monitoring fatality search will allow for clean sweep of the project site, enabling fatality counts to commence with start up of turbine operations. B-20
- 6. Mitigation Measure 4.4-1b, provision “ii” states “Post-construction monitoring shall be 5 years in duration.” This should be changed to “shall be 6 years in duration.” This allows for significant variation in yearly avian fatality rates to be captured at both begin and end of the post-construction monitoring periods. B-21
- 7. Mitigation Measure 4.4-1b, provision “iv” lists requirements of the post-construction monitoring program. To this list should be added “searcher efficiency” and “carcass scavenger removal” studies to enable calculation of realistic fatality rates. B-22
- 8. Mitigation Measure 4.4-1b, provision “v” requires fatality monitoring of each turbine once per month, with a subset of the turbines (30%) to be monitored twice per month. Applicant should be required to monitor all turbines twice per month for avian and bat fatalities because District research has shown that significant scavenging of avian carcasses occurs on at least one portion of the site (see *Smallwood et al. 2010; Journal of Wildlife Management, 74(5):1089-1097*). This will allow for more precise estimate of actual avian and bat fatality rates, and will contribute to identifying deadly turbines. B-23

- 9. Mitigation Measure 4.4-1b, provision “vi” requires submission of timely reports to the Altamont Pass Wind Resource Area Scientific Review Committee. It should also include the Contra Costa County TAC. As per above comments, change 2 year final monitoring report to year to 3 year final monitoring report. In addition, raw data from post-construction monitoring should be made available upon request to third parties for independent analysis. B-24
- 10. As per US Fish & Wildlife Service Draft Land-Based Wind Energy Guidelines, mitigation measures to compensate for the post-construction, cumulative impacts of the 30 year project on golden eagles, especially the local breeding population, need to be addressed. Cumulative impacts should be based initially on the annual mortality estimates presented in Table 4.4-2 and adjusted accordingly based on post-construction fatality monitoring. B-25
- 11. Cumulative impacts on local populations of other species known to experience potentially significant fatality rates in re-powered wind farms of the Altamont should be considered and mitigation plans developed accordingly. B-26

E. Hazards and Hazardous Materials

- 1. Mitigation Measure 4.9-3 on page 4.9-11 states that PG&E would be contacted 30 days prior to construction activities. This measure should also note that there are two petroleum pipeline easements that are located within the project area. At several locations these pipelines have experienced significant erosion which may have threatened their integrity. (See enclosed Figure 2). Howden Road crosses these easements approximately three times. This mitigation measure should include notifications to these easement holders and provisions to protect the pipelines from the effects of heavy equipment crossings, excavation, grading and erosion. This should include measures to prevent pipeline crushing. Road widening and abandonment of obsolete roads also have the potential to disrupt the pipelines. Specific protective measures should be required to protect the pipelines in these areas. B-27

F. Hydrology and Water Quality

- 1. On page 4.10-2 please note that the District retains the water rights to its property in the project area. Surface and groundwater extraction would not be permitted. B-28
- 2. As noted above in comments A6, A7 and A8 the project has the potential to adversely affect water quality and hydrology within the project area as it relates to watershed changes and road construction. These potential effects are not adequately evaluated in the DEIR. Impact 4.10-4 on page 4.10-21 notes that there would be no effects; however, it does not appear to fully consider downstream effects. B-29
- 3. Construction of an expanded maintenance facility and associated increased impervious surfaces will increase the amount of runoff, and may increase the amount of sediment, B-30

sewage effluent, oil and grease that could be discharged from the substation into the adjacent drainage. These effects are not adequately evaluated in the DEIR.

- 4. Runoff from the existing maintenance facility appears to have contributed to significant downstream erosion in an ephemeral drainage. (See enclosed Figure 3). There has been significant down-cutting in this drainage, exposing a petroleum pipeline (see enclosed Figure 4) that was once covered by fill and riprap. Riprap placed over the pipeline on more than one occasion has been washed downstream by the heavy runoff generated upstream. The sediment from this drainage has been deposited downstream in a stock pond that contains a population of California tiger salamander. The EIR should include measures to stabilize this drainage and prevent further erosion and exposure of the petroleum pipeline. Restoration of this drainage may present a good opportunity for the project to mitigate impacts to biological resources and water quality.

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G. Land Use and Planning

- 1. Table 4.11-1 on page 4.11-7 contains a table comparing the proposed project with the conservation measures contained in the East Contra Costa HCP/NCCP. Under Conservation Measure 1.2 there is a statement that Subzone 5 is not part of the preserve system. This statement appears to be incorrect because the project area is contained with Subzone 5d as shown on in Figure 5-2 of the Final HCP document. This subzone has been acquired by the District as part of the preserve system. Please clarify.
- 2. As previously noted above under comment D4, the District does not support unnecessary destruction of animal burrows in the project area merely because they are within a certain distance of project work areas. Table 4.11-1 on page 4.11-8 under Conservation Measure 2.5 states that the project would be consistent with this conservation measure because it would require burrow "enhancement or creation". This is a project-specific mitigation measure for impacts to preserve lands (that are already HCP mitigation lands). This measure does not promote the conservation or recovery of burrow-dependent species. Conservation Measure 2.5 in the HCP/NCCP is to "increase the availability of burrows" (see page 5-84 of the Final HCP/NCCP Volume 1) within preserve lands as mitigation for off-site impacts permitted through the HCP/NCCP. The project mitigation measures should focus first on avoidance and minimization of impacts to burrows instead of simply clearing areas of their burrows. Where feasible, the overall goal should be to put burrows back after construction where they were located before project construction.

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H. Noise

- 1. On page 4.13-11 under short-term noise impacts there is a description of "normal working hours" that includes 8:00 am to 6:00 pm on Saturdays and Sundays. For

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construction purposes, weekends are not considered “normal working hours” by the District. Unless specifically permitted, the District would not allow weekend project construction. Weekend construction may also conflict with existing visitor programs at Vasco Caves, as noted under comment B1 above.



- 2. The EIR should evaluate the potential noise effects to the other District residences identified under comment C1 above.

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I. Recreation

- 1. The discussion of recreation on page 4.16-3 does not adequately evaluate the potential impacts of project construction on recreation in the core area of Vasco Caves. As noted under comments B1 and H1 above, we request that there be no weekend construction use of Howden Road.

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J. Transportation and Traffic

- 1. The discussion of transportation and traffic on 4.17-11 does not adequately evaluate the potential impacts of project construction traffic on recreation in the core area of Vasco Caves. As noted under comments B1, H1 and I1 above, we request that there be no weekend construction use of Howden Road.

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K. Utilities and Service Systems

- 1. As described on pages 4.18-6 and 4.18-7 the project would result in the creation of new impervious surfaces at the substation. This will increase the amount of runoff, and may increase the amount of sediment, sewage effluent, oil and grease that will be discharged from the substation into the adjacent drainage (as previously discussed under comments A6, A7, A8, F2 and F3 above). This impact is not fully evaluated in the DEIR.
- 2. Page 4.18-7 references the potential use of culverts as an acceptable drainage component for runoff from the expanded maintenance facility. As previously described in comment A8 above we do not believe that culverts are the best approach to conveying runoff because they concentrate flows and cause downslope scouring (see *Figure 1 enclosed with this letter*). Instead we request that runoff be redirected into a broad sloping grassy area that can slow and “pre-treat” runoff (i.e. remove some pollutants) before it is discharged into the adjacent impacted drainage (see *comment F4 above, and Figures 3 and 4 enclosed with this letter*).

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L. Project Alternatives

- 1. Twenty four proposed turbine sites are identified DEIR within which to construct 21 turbines. Two of these sites, A1 and A3, are located at Vasco Caves Regional Preserve on the former Vaquero Farms Property west of the existing maintenance facility and proposed O&M building. These two turbine sites are located in closest proximity to the sensitive natural, cultural and scenic resources of the rock outcrop portion of Vasco Caves. The Preserve would be most impacted by these two turbines. We request that these sites be relocated away from this sensitive area, or if not feasible, be eliminated for further consideration as described in Alternative 3A on page ES-6, and 6-16 and 6-17 of the DEIR.
- 2. Alternative 4 provides for an extended construction schedule to reduce the daily generation of NOx emitted by constructed equipment. As described under comment C2 above we believe that by relocating potential sensitive receptors (i.e. impacted residents) in the project area this impact could be mitigated. This would allow the project to be constructed on a shorter schedule and would still mitigate NOx impacts to sensitive receptors.

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Figure 1 - Gully Erosion from Road



Figure 2 - Exposed Petroleum Pipeline



Figure 3 - Eroded Drainage



Figure 4 - Exposed Petroleum Pipeline in Drainage



Comment Letter B

2.3.2 Letter B – Responses to Comments from East Bay Regional Park District (EBRPD)

B-1 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.

B-2 In DEIR Chapter 3, *Project Description*, the only mention of privately owned land is on Figures 3-2a and 3-2c, which indicate privately owned land outside of the Project area. Therefore no language has been changed in Chapter 3.

There are four references to private property in DEIR Chapter 4, which have been corrected as follows.

Page 4.1-53, first paragraph under Impact 4.1-5:

As discussed in Chapter 3, *Project Description*, the Project is located entirely on ~~private property and~~ public property with restricted public access.

Page 4.4-35, bullet 15:

All Project-related vehicles shall observe a maximum 20 miles per hour speed limit on ~~private~~ roads within the Project area.

Page 4.4-73, second paragraph under Impact 4.4-13:

Project traffic may pose a higher risk of road mortality on ~~private~~, Project area roads.

Page 4.4-73, third paragraph under Impact 4.4-13:

Adhering to speed limits, the likelihood for Project traffic to reduce overall traffic speeds on Vasco Road, and the reduced likelihood for traffic on Project area ~~private~~ roads during rainy periods would adequately reduce potential mortality risks to wildlife species.

B-3 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.

B-4 The County agrees that the text referenced by the commenter omits impacts to cultural resources as an area of controversy. The omission was inadvertent. The following bullet has been added to Section ES-7 of the DEIR Executive Summary, page ES-7, in response to this comment:

- Impacts related to hydrology, including erosion within the watershed; ~~and~~
- Access and site security for adjacent properties; and.

- Impacts to cultural resources located within the Project area, including Vasco Caves.

Impacts to cultural resources were analyzed in the DEIR, Section 4.5, *Cultural Resources*.

B-5 In response to this comment, text found on page 1-2 of the DEIR is revised as follows:

Other agencies that may rely on this EIR when considering approvals for the Project include the State Water Resources Control Board, California Department of Fish and Game, ~~and Alameda County,~~ and East Bay Regional Park District.

B-6 The size and condition of the existing/former system is unknown. An inspection of the system is planned to evaluate whether a new system is needed. If a new septic system is required, then the system would be designed by an experienced installer or a professional engineer, and would adhere to state and local requirements regarding septic systems. The size of the system would be based on the number of employees and the percolation rates of the soil at the O&M site.

Effects from the existing septic system are not a CEQA issue. Effects of the new system to surface and groundwater quality are addressed Section 2.3.2, *Master Response on Hydrology*, subsection 2.2.4.3, and were found to be minimal.

B-7 Information on the existing surface runoff and subsurface drainage from the Project area (which includes the O&M site) is contained in DEIR Section 4.10.2.1, *Hydrology and Water Quality, Regional and Local Setting* (pages 4.10-1 through 4.10-6). The existing O&M site, which is south of Howden Road and contains the existing building, has slopes between 2 and 8 percent. Typically the maximum slope for a construction laydown area is approximately 5 percent. It is likely that only minor grading would be necessary for temporary trailer and equipment shed installation. Grading for the new O&M building would also be minor and would mostly involve grading a level area over the footprint of the existing building. Since no grading is expected on the north side of Howden Road, only one drainage area would be affected by work at the O&M facility. The Project's impacts to drainage patterns in the Project area, including those affected by work at the O&M facility, would be mitigated to less-than-significant levels with implementation of Mitigation Measures 4.10-3a and 4.10-3b (DEIR pages 4.10-19 to 4.10-20). For updates to Mitigation Measures 4.10-3a and 4.10-3b, see Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2.

B-8 See Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2.

B-9 The County agrees, as was stated in DEIR Chapter 3, *Project Description*, page 3-17, "Safety signs would be posted around towers, transformers, and other high-voltage facilities, and along roads, in conformance with applicable State and federal regulations."

B-10 The commenter requests more information about the "turnout for vehicle stacking" noted on page 3-29 of the DEIR, and how the Project's traffic control plan would address

conditions if the traffic volume exceeds the capacity of that turnout. The note about a “turnout” in Chapter 3, *Project Description*, refers to the southbound shoulder that existed prior to the County’s Vasco Road Safety Improvement Project that is currently under construction. That shoulder extended more than 1,000 feet north of the Project area access and would have accommodated vehicle stacking (i.e., queues of vehicles that might occur when they travel inbound to the Project area) without impeding traffic flow on Vasco Road. The Vasco Road Safety Improvement Project – Phase 1, anticipated to be completed in December 2011, will provide two travel lanes and a shoulder in the southbound direction, and one travel lane and separate left turn lane in the northbound direction, at the Project area access. That roadway configuration would fully accommodate Project-generated traffic volumes; i.e., queues of vehicles (“stacking”) that might occur would not impede traffic flow on Vasco Road.

- B-11 The commenter’s opinion that Project drive-by inspections should include property security, cultural resource protection, and trash collection as routine activities is noted. As stated on DEIR page 3-31, “[p]ersonnel would review the condition of the roads and other visible aspects of the wind farm’s infrastructure. This would include reviewing the condition of substation fencing and components, looking for any loose trash on the site, and checking for any vandalism. Conditions found that could impact human safety, wildlife, livestock, or the environment in general that cannot be immediately fixed would be reported to the facility’s manager and appropriate regulatory agencies as required by permit conditions and applicable regulatory requirements.”

Mitigation to protect impacts to cultural resources during construction, operation, maintenance and decommissioning of the Project is provided in DEIR Section 4.5, *Cultural Resources*. Regarding the County’s ability to impose stricter property security and trash collection duties on the Applicant, the County’s authority to impose mitigation measures in an EIR is subject to the constitutional requirement that there must be a nexus, or reasonable relationship, between the impact to be mitigated and the proposed project (CEQA Guidelines § 15041(a), 15126.4(a)(4); *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987)). Analysis in the DEIR and FEIR did not find any significant impacts relating to trash collection or property security. Thus, the County is not authorized under CEQA to impose additional requirements on the Applicant as a mitigation measure in the EIR.

- B-12 For major repairs and component replacement, which would be a rare occurrence, road widening could occur in the Project area. To allow for crane travel, the road shoulders would be recompacted to construction width (i.e., the full width of the combination road and cranewalk path would be 32 feet, including a 16-foot wide gravel road and 8-foot wide compacted shoulders on both sides of the road). Following this type of work, the shoulders would be restored by decompacting and restoration of any impacted vegetation. For transport of large turbine components (i.e., blades, tower sections, and the nacelle), it would be possible to use specialized equipment and techniques that would not require additional road widening.

- B-13 As stated in the DEIR, Chapter 2, *Project Description*, “Construction activities would typically be scheduled during the daylight hours from 8:00 a.m. to 5:00 p.m. Monday through Friday. If extended hours are necessary or desired, the Applicant would seek approvals from the County.” The Applicant has discussed with EBRPD the need for coordination of construction activities to accommodate tours and other activities, particularly should a need arise for construction on weekends. The Applicant would provide EBRPD notice of construction activities at least one week in advance so that construction could be halted or modified as needed by EBRPD, and would communicate weekly with EBRPD to coordinate the week’s activities. In conjunction with Mitigation Measures 4.1-1a and 4.1-1b, potential visual and traffic impacts to recreational users of the Vasco Caves Regional Preserve would be mitigated to less-than-significant levels.
- B-14 The residences identified by the commenter as EBRPD-owned are identified as air quality sensitive receptors in DEIR Section 4.3.2.1 (see pages 4.5-5 and 4.5-6). Note that the DEIR refers to the residence south of Howden Road as the Vasco Caves caretaker residence.
- B-15 The commenter indicates that mitigation to temporarily relocate park residents during construction would reduce Impact 4.3-2 to a less-than-significant level. However, Impact 4.3-2 is related to the Project contributing to existing air quality violations, which is a regional concern that is assessed by comparing estimated Project construction emissions to the Bay Area Air Quality Management District (BAAQMD)’s mass emissions significance thresholds (e.g., 54 pounds per day for NO_x). Relocating park residents would not reduce construction emissions; therefore, the impact would remain significant and unavoidable.

With regard to the potential for the Project to expose sensitive receptors to construction equipment pollutant concentrations, it was determined that there would be no impact because construction activities would occur over a relatively short period of approximately 12 months, associated emissions would be spatially dispersed over the entire Project area, and the closest sensitive receptors are at least 1,000 feet from the nearest construction areas (see discussion d, on DEIR page 4.3-11).

- B-16 The County has made the following correction to DEIR Section 4.4, *Biological Resources*, page 4.4-4, based on information provided by the commenter:

Since ~~2005~~ 2009, the EBRPD has acquired lands to manage and preserve as part of the East County HCP, and has also acquired lands to expand their regional preserves.

- B-17 The title of Figure 4.4-5 (DEIR page 4.4-37) has been changed for clarification as follows:

~~Special Status Bird Occurrences~~ Nesting Occurrences of Special-Status Birds in the Project Area.

- The graphic did not intend to provide flyover observations of all known or affected species, but rather depicted CNDDDB information that is typically based on documented nesting locations.
- B-18 The County disagrees with the opinions stated in this comment and will not remove the prohibition on relocation or permanent shutdown of turbines. The proposed turbine locations are based on the best available science and are believed to effectively balance protection of avian and bat species with energy production. Mitigation Measure 4.4-1b contains adaptive management provisions that would be applicable to any turbine that was found to kill a disproportionate number of birds or bats.
- B-19 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.6.
- B-20 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- B-21 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- B-22 While site-specific and team-specific searcher-efficiency and carcass scavenger removal studies would result in a higher degree of confidence in these scaling factors, detailed studies have been performed to refine these scaling factors and the results have been peer-reviewed and published. Such published scaling factors may be relied upon when estimating fatalities in post-monitoring reports. It is also important to note that scaling factors appear to be “backwards compatible” and may be applied retroactively as methods improve.
- B-23 Comment noted. The frequency of fatality monitoring accords with the frequency of monitoring required for the Vasco Wind Energy Project. The County seeks to maintain consistency between these similar, neighboring projects. The DEIR has not been revised in response to this comment. See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- B-24 The mitigation measure’s reference to Contra Costa County should be read as inclusive of all County departments, committees, etc. Thus, no specific reference to the TAC is required.
- The raw data from post-construction monitoring would be made available to the public, as monitoring reports are public information and available upon request to Contra Costa County. Regarding changing the 2-year final monitoring report to a 3-year final monitoring report, see Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- B-25 The commenter refers to the USFWS Draft Voluntary Land-Based Wind Energy Guidelines (most current version is July 2011) and states that mitigation measures to compensate for post-construction, cumulative impacts need to be addressed. However, these draft guidelines are still under development by the USFWS and have no standing until they are fully promulgated by the agency. Per USFWS instructions, the 2003

- guidelines will be used until the draft guidelines are finalized. As of publication of this FEIR, there is no firm date for finalizing the draft guidelines nor can the current draft be considered as final at this time. In following the notes of recent meetings of the USFWS Federal Advisory Committee on these guidelines, the decision whether to include or exclude cumulative impacts is one of the many topics yet to be resolved. Consequently, the cumulative analysis in the EIR will continue to follow CEQA guidance (see Chapter 5 of the DEIR).
- B-26 This comment suggests a different approach to analyzing cumulative impacts related to avian and bat mortality than the one taken in the DEIR, but does not suggest that the DEIR's approach is flawed. As discussed in Section 2.2.3, *Master Response on Biological Resources*, sections 2.2.3.4 and 2.2.3.9, Mitigation Measure 4.4-1b has been developed to be adequately protective of the Focal Raptors Species, which are species of local concern (as described in see DEIR Section 4.4, *Biological Resources*) and have been identified by local chapters of the Audubon Society, CARE and others as indicator species for continued monitoring and research in the APWRA. Measures to protect these more sensitive species, by design, also would protect other avian species regardless of the variables that influence avian species more generally. The Project's incremental contribution to cumulative habitat loss is analyzed in DEIR Section 5.4.3.4, *Biological Resources*. No evidence indicates that the mitigation measures proposed to avoid or reduce impacts to biological resources are inadequate. Consequently, the DEIR has not been revised in response to this comment.
- B-27 The comment is noted. It should be also noted that on August 1, 2011, an email from Brad Olson of the EBRPD stated that their specific comments about the exposed petroleum have become moot, as Shell (the pipeline operator) reburied the pipeline in July 2011 (EBRPD, 2011). Regardless, it is reasonable to broaden the impact and mitigation measure to include other pipelines crossing in the Project area as follows:

Impact 4.9-3: Project construction could cause a significant hazard related to accidental rupture of the ~~natural-gas~~ pipelines that crosses the Project area. (*Less-than-Significant Impact with Mitigation Incorporated*)

Construction activities such as excavation and grading for wind turbine foundations and roadways could inadvertently damage the underground PG&E high pressure natural gas pipeline that crosses the Project area (Figure 3.3) in close proximity to a number of proposed wind turbine locations. Several other pipelines cross the Project area carrying petroleum products. The potential consequences of a pipeline rupture include jet flame, radiant heat, flammable vapor cloud flash fire, and unconfined vapor cloud explosion, which could fatally injure construction workers, damage equipment, and initiate a wildland fire.

As described above under *Regulatory Setting*, the construction contractor is required by State law to contact USA North at least two working days prior to initiation of ground-disturbing construction activities. USA North would notify

the utility providers in the vicinity of the planned excavations. Each provider would be responsible for marking the location of its underground utilities and coordinating with the contractor to avoid damage. Although this requirement would provide notification to PG&E and other pipeline operators of Project excavation activities, given the Project size, it may not provide sufficient time for PG&E or other pipeline operators to locate and mark the ~~gas~~ pipeline or for the Applicant to develop and incorporate appropriate design changes, if needed, to avoid damage to the utility. If construction affected the underground ~~gas~~ pipeline, it would be a significant impact.

Implementation of Mitigation Measure 4.9-3 would reduce this impact to a less-than-significant level by requiring advance notification and coordination with PG&E and other pipeline operators for protection of the ~~gas~~ pipelines.

Mitigation Measure 4.9-3: At least 30 days prior to commencement of construction activities, the Applicant shall provide ~~PG&E~~ the pipeline operators with the Project construction plans, notify the County that it has done so, and make arrangements with ~~PG&E~~ the pipeline operators to identify underground utilities potentially affected by the Project so that the Applicant can modify its construction plans to avoid utility conflicts. Prior to beginning construction, the Applicant shall make further arrangements with ~~PG&E~~ the pipeline operators regarding protection of the ~~existing gas~~ pipelines, possibly to include having a ~~PG&E~~ the pipeline operators' monitor present during excavation near the pipelines to ensure that the facilities are not damaged.

Significance of Impact after Mitigation: Less than Significant.

- B-28 This comment appears to stem from a misunderstanding that the existing O&M building water well would be used to obtain construction water. This is not the case. This existing well would only be used for non-potable water requirements associated with O&M activities at the O&M building.
- B-29 See Section 2.2.4, *Master Response on Hydrology*, subsections 2.2.4.2 and 2.2.4.3.
- B-30 See Section 2.2.4, *Master Response on Hydrology*, subsections 2.2.4.2 and 2.2.4.3.
- B-31 See Response B-27. See Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2.
- B-32 Based on input from the commenter, DEIR Section 4.11, *Land Use and Planning*, Table 4.11-1, row two (page 4.11-7), has been revised as follows:

~~Although the Project area is located in East County HCP/NCCP Inventory Area Subzone 5, it is not a part of the Preserve system. Nonetheless, implementation of the Project is expected to restore at least 29 acres...~~

- B-33 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.6 for revised language on the treatment of burrowing owl burrows. Overall, burrow closure is expected to be minimal. With the exception of access roads, the Project is proposed on or near ridgetops where burrowing owl burrows are not typically located, and only burrows within the construction footprint would be closed. Burrows outside the footprint but within the protection buffer would be surveyed and covered, also using passive relocation if necessary, and uncovered after construction was complete. Repowering the Project area is also anticipated to improve habitat for burrowing owls over the long-term through grassland reclamation.
- B-34 The commenter is correct that the “normal working hours” definition provided in Section 4.13, *Noise*, (page 4.13.-11) includes Saturdays and Sundays from 8:00 a.m. to 6:00 p.m. To clarify, the normal working hours definition was used as part of the County’s criteria to assess the significance of short-term impacts. As is further discussed in Response B-13, construction is not proposed to occur on the weekends. If weekend hours were necessary or desired, the Applicant would seek approvals from the County.
- B-35 See Response B-14. The DEIR contains noise-related analysis relative to the residences identified by the commenter as EBRPD-owned. See DEIR *Sensitive Receptors* discussion on page 4.13-7 and the discussions for Impacts 4.13-1 and 4.13-2 on pages 4.13-13 through 4.13-18.
- B-36 Regarding weekend construction use of Howden Road, see Response B-13.
- B-37 Regarding weekend construction use of Howden Road, see Response B-13.
- B-38 Regarding weekend construction use of Howden Road, see Response B-13.
- B-39 The commenter is correct that the Project would result in the creation of new impervious surfaces at the substation. However, the substation ground would not be paved, and would consist of the same rock material that would be used on the roads; therefore, it would not constitute impervious surface. New impervious surfaces at the substation would be limited to “areas under the proposed electrical system upgrades, including the circuit breakers, generation step-up transformer, bus work, capacitors, and a 250 square foot control house” (DEIR page 4.18-7).

Degradation of water quality from storm water runoff at the substation is analyzed in DEIR Section 4.10, *Hydrology and Water Quality*. Impact 4.10-1 pertains to violation of water quality standards during operations (page 4.10-5), and Impact 4.10-4 pertains to the creation of additional runoff water which could create additional sources of polluted runoff (page 4.10-21). Analyses for both impacts include the proposed substation as a location of potential chemical release and/or as a location of impervious surface. Implementation of Mitigation Measures 4.10-1, 4.10-3a and 4.10-3b would reduce impacts from pollutant discharge, from accidental release or from stormwater runoff, to less-than-significant levels.

- B-40 See Section 2.2.4, *Master Response on Hydrology*, subsections 2.2.4.2 and 2.2.4.3.
- B-41 See Response A-9 and Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*.
- B-42 See Response B-15.



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2010-TA-0345-2

JUL 19 2011

Mr. William Nelson
Contra Costa County
Department of Conservation and Development
651 Pine Street, 4th Floor-North Wing
Martinez, California 94553

Subject: Comments on the Tres Vaqueros Windfarm Project Draft Environmental Impact Report, Contra Costa County, California (County File Number LP09-2005)

Dear Mr. Nelson:

This is in response to Contra Costa County's (County) May 31, 2011, Notice of Completion and Availability and Notice of Public Hearing for a Draft Environmental Impact Report (Draft EIR) for the proposed Tres Vaqueros Windfarm Project in southeastern Contra Costa County. At issue are effects to the federally threatened California red-legged frog (*Rana draytonii*), threatened California tiger salamander (*Ambystoma californiense*), endangered San Joaquin kit fox (*Vulpes macrotis mutica*), threatened Alameda whipsnake (*Masticophis lateralis euryxanthus*), endangered longhorn fairy shrimp (*Branchinecta longiantenna*), threatened vernal pool fairy shrimp (*Branchinecta lynchi*), threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), endangered Contra Costa goldfields (*Lasthenia conjugens*), and the endangered palmate-bracted bird's beak (*Cordylanthus palmatus*). Our comments are provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

C-1

Our comments focus exclusively on the Draft EIR mitigation measures described in section 4.4.6.2 Specific Biological Resources Mitigation Measures where compensation for effects to federally listed species is proposed. The U.S. Fish and Wildlife Service's (Service) comments regarding construction-related impacts and associated mitigation measures will be addressed in detail through formal section 7 consultation with the Army Corps of Engineers (50 CFR § 402.14). These comments are provided to assist you with your environmental review of the proposed project and are not intended to preclude future comments from the Service.

1. The Draft EIR states that approximately 6 acres of disturbance will occur within proposed or conveyed San Joaquin kit fox conservation easement areas on Contra Costa Water District lands established as mitigation for the creation of the Los Vaqueros Reservoir.

C-2

Mr. William Nelson

2

Mitigation measure 4.4-6c in the Draft EIR states that, "in order to maintain under conservation easement the full acreage required for the original Los Vaqueros Reservoir Project, the applicant shall replace any affected acreage of existing kit fox easement with an equivalent amount of acreage." Further, the Service does not consider this to be an appropriate mitigation strategy for effects to a conservation easement area. This does not reflect information provided to the Service by the applicant during section 7 consultation on the proposed project which indicates that effects to Contra Costa Water District easement lands will be avoided.

↑
C-2

2. Mitigation measures 4.4-4ix, 4.4-4x, and 4.4-4c propose to provide compensation for permanent and temporary effects to California tiger salamander, California red-legged frog, and San Joaquin kit fox habitat at a 1:1 ratio. This ratio is considerably lower than compensation provided by similar wind development projects in the vicinity of the proposed project and is inconsistent with nearby regional conservation efforts such as the East Contra Costa Habitat Conservation Plan and Natural Community Conservation Plan and the East Alameda County Conservation Strategy.

↑
C-3

3. Any project activities taking place on parcels encumbered by conservation easements, the purpose of which is to ensure that the easement area is preserved for listed species in perpetuity, would result in the need to compensate for effects to listed species from the proposed project and effects for which the conservation easements were originally recorded; this could result in compensation at higher ratios.

↑
C-4

Thank you for the opportunity to provide comments on the Tres Vaqueros Windfarm Project Draft EIR. Please address any questions or concerns regarding these comments and recommendations please contact Stephanie Jentsch or Ryan Olah, Coast Bay/Forest Foothill Division Chief, at the letterhead address, telephone (916) 414-6600, or electronic mail at Stephanie_Jentsch@fws.gov or Ryan_Olah@fws.gov.

Sincerely,



Eric Tattersall,
Deputy Assistant Field Supervisor

cc:
Craig Weightman and Scott Wilson, California Department of Fish and Game, Yountville, CA
Bill Guthrie, U.S. Army Corps of Engineers, Sacramento, CA

2.3.3 Letter C – Responses to Comments from U.S. Fish and Wildlife Service (FWS)

- C-1 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.
- C-2 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.3.
- C-3 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.7.
- C-4 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.3. The County notes comment regarding higher compensation ratios for impacts to conservation easements.



State of California – The Natural Resources Agency
 DEPARTMENT OF FISH AND GAME
 Bay Delta Region
 7329 Silverado Trail
 Napa, CA 94558
 (707) 944-5500
www.dfg.ca.gov

Comment Letter D
 EDMUND G. BROWN, Jr., Governor
 JOHN McCAMMAN, Director



July 18, 2011

Mr. William Nelson
 Contra Costa County
 Department of Conservation and Development
 651 Pine Street, 4th Floor
 Martinez, CA 94553

Dear Mr. Nelson:

Subject: Tres Vaqueros Windfarm Repowering Project, Draft Environmental Impact Report, SCH #2009032077, Contra Costa County

The Department of Fish and Game (DFG) appreciates the opportunity to comment on the Tres Vaqueros Windfarm Repowering Project (Project) draft Environmental Impact Report (EIR). The Project is located in the Byron Hills of southeastern Contra Costa County on 2,664 acres of land designated by the Contra Costa County General Plan as Watershed, Agricultural Land, and Parks and Recreation. The Project involves the decommissioning and removal of 91 wind turbines and related infrastructure, and their replacement with up to 21 turbines and related infrastructure. The turbines will have a nameplate capacity of either 2.0 megawatts or 2.3 megawatts, depending on the model chosen, and a maximum hub height of 80 meters (262 feet) with a maximum height of 130.5 meters (429 feet). Installation of these turbines would increase the nameplate generating capacity of the repowered area from 29.1 megawatts to approximately 42 megawatts. The Project site is characterized by rolling hills covered predominantly by annual grassland which supports an abundant ground squirrel and rodent populations, which in turn support many common and special-status species including, the burrowing owl (*Athene cunicularia*), a California Species of Special Concern; the California tiger salamander (*Ambystoma californiense*), which is listed as threatened pursuant to both the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA); the California red-legged frog (*Rana draytonii*), listed as threatened pursuant to ESA; and the golden eagle (*Aquila chrysaetos*), a species designated as fully protected pursuant to Section 3511 of the Fish and Game Code.

The post-construction monitoring program proposed in mitigation measure 4.4-1b specifies that 30 percent of the turbines will be monitored at least twice per month and the remainder once per month for the duration of the post construction monitoring period which consists of three contiguous years of monitoring followed by two more contiguous years after ten years of operation. Turbines monitored only once per month may not detect or account for an accurate number of fatalities. To determine if individual turbines present a disproportionate mortality risk, DFG recommends including the additional requirement that all turbines be searched twice per month for a minimum of a one-year period.

Carcass removal rates in the Project area may be sufficiently high enough that bats and other small-bodied birds will be underestimated or missed during a once per month monitoring cycle. Smallwood (Smallwood, 2010) found on the Project site that on average after 15 days

D-1

Mr. William Nelson
 July 18, 2011
 Page 2

scavengers removed 42 percent of large raptors and 62 percent of small birds. Additionally, small birds and bats are often missed by searchers. Kerlinger (Kerlinger, 2010) found that 65 percent of small birds and bats were missed by searchers during surveys in the nearby Montezuma Hills Wind Resource Area in Solano County. A once per month monitoring cycle would likely lead to even fewer carcass detections.



Proposed mitigation measure 4.4-3 requires pre-construction bat surveys be conducted in the area but does not specify the survey period. DFG recommends that surveys be conducted for a minimum of a full year in locations approximate to turbine locations to quantify risk. Mitigation measure 4.4-3 also specifies that increasing the cut-in speed of turbines could be an adaptive management measure if particular turbines are disproportionately affecting bats. DFG recommends that the use of an increased cut-in speed be the preferred adaptive management measure if particular turbines show a disproportionate risk or the Project significantly exceeds baseline predictions. DFG recommends the threshold for adaptive management be based on a statistical analysis that takes into account the sample size and other site-specific factors rather than an arbitrary percentage.

D-2

The Project proposes to increase the installed capacity from 29.1 megawatts to 42 megawatts thereby increasing the wind-swept area from 35 acres to 48 acres. DFG is concerned that this increase in the wind-swept area will result in a substantial increase in avian and bat mortality as compared to the baseline.

The draft EIR relies on analysis conducted by ICF (ICF International, 2010) to conclude that the Project may result in fewer fatalities. The ICF paper summarized the analysis of two repower projects in the Altamont Pass Wind Resource Area (APWRA), the Diablo Winds Project and the Buena Vista Project. The Diablo Winds Project repowered FloWind vertical axis turbines with 660 kilowatt horizontal axis turbines. The Buena Vista Project repowered 150 and 160 kilowatt turbines with 1 megawatt turbines. Direct comparison between the Diablo Project and the proposed Project are speculative given both the differences in technology and rated capacity. The Buena Vista Project is the most similar to the proposed Project but comparisons are problematic because the post-construction monitoring search area is not large enough to account for 80 percent of the mortalities as recommended by the California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development (Guidelines). Kerlinger (Kerlinger, 2010) found that when searching out to 105 meters, 81percent of the bird and bat incidents found during the Shiloh I post-construction monitoring were located within 90 meters. Of the large birds, 79 percent were found within 90 meters. The search area at the Buena Vista Project extended to 80 meters. Turbines at the Shiloh I Project are taller than the Buena Vista turbines, but the terrain of the Buena Vista Project is considerably steeper. These differences make direct comparisons to the expected benefit of taller more efficient turbines problematic without additional information.

D-3

DFG recommends the cumulative impact analyses for the Project focus on likely impacts to bird and bat populations over the entire estimated operational life of the Project. The draft EIR describes the impacts based on fatality per megawatt/year. A more complete description of cumulative impacts would also identify the total number of bird and bat fatalities that could occur over the Project life. Based on this analysis, DFG recommends the draft EIR identify and call for biologically meaningful mitigation to compensate for the significant and unavoidable impacts

D-4



Mr. William Nelson
 July 18, 2011
 Page 3

to bird and bat species. The Guidelines identifies several forms of compensatory mitigation that are known to protect and enhance bird and bat populations. Options for mitigation include off-site conservation and protection of essential habitat, off-site conservation and habitat restoration to restore habitat function and/or increase carrying capacity, and off-site habitat enhancement. To be successful, these mitigation options need to be properly designed, located and implemented where they would be effective. Additionally, if post-construction monitoring reveals that avian and bat mortality is significantly larger than expected, DFG recommends the County require additional compensatory mitigation.



DFG recommends that compensatory mitigation for Project biological impacts should consist, in part, of land-based conservation (fee title or easement) that supports breeding, foraging, or other attributes of the impacted species life history related to sustaining and enhancing populations. Funding for management of conservation lands is part of ensuring these lands provide the intended values over time.



D-5

If you have any questions, please contact Mr. Craig Weightman, Staff Environmental Scientist, at (707) 944-5577 or cweightman@dfg.ca.gov; or Mr. Scott Wilson, Environmental Program Manager, at (707) 944-5584.

Sincerely,

Carl Wilcox
 Regional Manager
 Bay Delta Region

ICF International, 2010. History, Assessment, and Implications of Avian Studies for the Vasco Winds LLC Repowering Project. Prepared for NextEra Energy Resources, LLC. June 2010.

Kerlinger, P., R. Curry, L. Culp, A. Hasch, A. Jain, 2010. Revised Post-Construction Avian Monitoring Study for the Shiloh I Wind Power Project Solano County, California: Final Report. Prepared for Iberdrola Renewables

Smallwood, Shawn, Douglas A. Bell, Sara A. Snyder, and Joseph E. Didonato, 2010. Novel Scavenger Removal Trials Increase Wind Turbine-Caused Avian Fatality Estimates. Journal of Wildlife Management. Vol. 74, No 5. pp. 1089-1097. July 2010.

2.3.4 Letter D – Responses to Comments from California Department of Fish and Game (CDFG)

- D-1 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- D-2 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.5.
- D-3 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- D-4 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- D-5 The comment regarding land-based conservation as compensatory mitigation is noted. See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4 for a discussion of compensatory mitigation.

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION

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DEPARTMENT OF
CONSERVATION
AND DEVELOPMENT

July 19, 2011

CC004032
SCH#2009032077

Mr. William Nelson
Contra Costa County
Department of Conservation and Development
651 Pine Street
4th Floor North Wing
Martinez, CA 94553

Dear Mr. Nelson:

Tres Vaqueros Windfarm Project – Draft Environmental Impact Report

Thank you for including the California Department of Transportation (Department) in the environmental review process for the Tres Vaqueros Windfarm Project. The following comments are based on the Draft Environmental Impact Report (DEIR).

Landscape Architecture

Please provide additional mitigation measures for the following:

- 1) Paint all turbines with a warm (tan tones) light grey color non-reflective paint, so as to better blend in with the surrounding earthen tan hillsides and vegetation, reduce overall glare, and help to reduce significance of impacts after mitigation.
- 2) Plant groups of trees (California native species) in selective sensitive foreground locations, so as to partially screen views of the large wind turbines and related facilities, and help to reduce significance of impacts after mitigation.

E-1
E-2

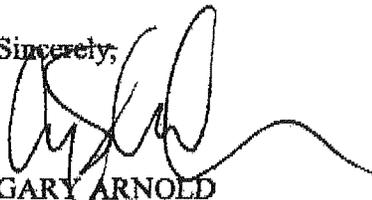
Mr. William Nelson/ Contra Costa County

July 19, 2011

Page 2

Please feel free to call or email Luis Melendez of my staff at (510) 286-5606 or Luis_Melendez@dot.ca.gov with any questions regarding this letter.

Sincerely,



GARY ARNOLD

District Branch Chief

Local Development – Intergovernmental Review

c: State Clearinghouse

2.3.5 Letter E – Responses to Comments from California Department of Transportation (Caltrans)

E-1 See Response A-6.

E-2 The commenter requests that groups of trees (California native species) be planted in selective sensitive foreground locations, so as to partially screen views of the large wind turbines and related facilities, and help to reduce significance of impacts after mitigation. The commenter does not specify the selective sensitive foreground locations at which trees should be planted. As discussed in DEIR Section 4.1, *Aesthetics*, the Project would result in less-than-significant impacts to views from local roadways, including Vasco Road, State Route 4, Camino Diablo, Walnut Boulevard, Byron Highway, Marsh Creek Road, and Morgan Territory Road. As such, no mitigation is required for views from roadways.

The Project would result in significant impacts to views from recreational areas, including the Morgan Territory Regional Preserve (DEIR page 4.1-46) and the following Los Vaqueros Watershed locations: Vista Grande Trail (DEIR page 4.1-42), Los Vaqueros Shoreline Trail (DEIR page 4.1-43), Marina (DEIR page 4.1-43), Los Vaqueros Watershed Office (DEIR page 4.1-44), and Los Vaqueros Interpretive Center (page DEIR 4.1-45). Views of the Project from these locations would range from a distance of 1 to 4 miles. Proposed turbines would be approximately 429 feet tall; trees planted on the Project site would be dwarfed by the turbines, and would be ineffective in even partially screening the turbines. For example, Figure 4.1-12 in the DEIR (page 4.1-36) shows a visual simulation of the Project as seen from the Los Vaqueros Interpretive Center. As shown in the simulation, native oak trees at the base of the wind turbines are too small to partially screen the turbine towers. Furthermore, planting trees in the foreground of sensitive viewing locations would be ineffective at partially screening the Project area because the viewsheds consist of expansive recreational areas, each of which offers views of the Project from many vantage points. The Vista Grande Trail, Los Vaqueros Shoreline Trail, and Morgan Territory Regional Preserve Whipsnake Trail are approximately 1.1 miles, 2.9 miles, and 9.6 miles long, respectively, with no specific vista lookout locations from which planted trees would effectively obscure views of the Project area (CCWD, 2011; EBRPD, 2010). The Marina is on the reservoir waterfront, with no foreground location in which to plant trees. The Interpretive Center includes a parking area, a building with exhibits, picnic area, and trailheads, all of which afford views of the Project area. Finally, views from the Los Vaqueros Watershed Office would show 14 turbines spread out across an expansive length of ridgeline, visible from the road and all locations surrounding the Office. For all viewsheds with significant and unavoidable impacts, given the expansive areas from which the Project would be visible, trees would not provide effective screening of the Project area.

California Regional Water Quality Control Board Central Valley Region

Katherine Hart, Chair

11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114.
(916) 464-3291 • FAX (916) 464-4645
<http://www.waterboards.ca.gov/centralvalley>



CONTRA COSTA
Edmund G. Brown Jr.
Governor

2011 JUN 27 12:32
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT



Linda S. Adams
Acting Secretary for
Environmental Protection

24 June 2011

William Nelson, Principal Planner
Contra Costa County Department of
Conservation and Development
651 Pine Street, 4th Floor, North Wing
Martinez, CA 94553

CERTIFIED MAIL
7010 1670 0002 0652 9509

COMMENTS TO DRAFT ENVIRONMENTAL IMPACT REPORT, TRES VASQUEROS WINDFARM REPOWERING PROJECT, SCH NO. 20090032077, CONTRA COSTA COUNTY COUNTY

Pursuant to the State Clearinghouse's 31 May 2011 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Draft Environmental Impact Report* for the Tres Vasqueros Windfarm Repowering Project, located in Contra Costa County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Hydrology and water quality are addressed in Chapter 4, under Sections 4.4 and 4.10.

1. Regulatory Setting

Basin Plan

A discussion on water quality control plans is contained within Chapter 4, Section 4.10.2.2 (page 4.10-9).

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans

F-1

were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:

http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

The Final Environmental Impact Report should provide an expanded discussion on the Proposed Project's consistency with the Basin Plan, in terms of protecting surface and ground water quality in, and downstream of, the project area.

Statement of Policy With Respect to Maintaining High Quality of Waters in California (State Water Board Resolution 68-16)

A key policy of California's water quality program is the State's Antidegradation Policy. This policy, formally known as the *Statement of Policy with Respect to Maintaining High Quality Waters in California* (State Water Board Resolution No. 68-16), restricts degradation of surface and ground waters. In particular, this policy protects water bodies where existing quality is higher than necessary for the protection of beneficial uses. Under the Antidegradation Policy, any actions that can adversely affect water quality in all surface and ground waters must:

1. meet Waste Discharge Requirements which will result in the best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained;
2. not unreasonably affect present and anticipated beneficial use of the water; and
3. not result in water quality less than that prescribed in water quality plans and policies.

Furthermore, any actions that can adversely affect surface waters are also subject to the Federal Antidegradation Policy (40 CFR Section 131.12) developed under the Clean Water Act.

For more information on this policy, please visit our website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf.

Clean Water Act 303(d) Listed for Impaired Water Bodies

The discussion on surface water quality provided in Chapter 4, Section 4.10.2 (p. 4.20-6) should provide a comprehensive listing of all Clean Water Act 303(d) listed for impaired water bodies within the project area. The analysis in the Draft Environmental Impact Report is based on the 2006 Clean Water Act 303(d) list for impaired water bodies. Please use the 2010 Clean Water Act 303(d) list for impaired water bodies, which can be located at http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml

↑
F-3

The Final Environmental Impact Report should provide a comprehensive list of all water bodies located within, and downstream of, the project area which are included on the 2010 Clean Water Act 303(d) list for impaired water bodies, and the constituent(s) or parameter(s) each water body or water body segment is listed for.

F-4

2. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

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The Construction General Permit requires under Provision XIII Post-Construction Standards, that all applicable construction activities comply with the runoff reduction requirements set forth in the Construction General Permit. All dischargers shall implement post-construction Best Management Practices to reduce pollutants in storm water discharges that are reasonably foreseeable after all construction phases have been completed at the site.

For more information on the Construction General Permit, visit the State Water Resources Control Board website at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed for the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916)557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. Water Quality Certification must be obtained prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements

If USACOE or any other federal permitting agency, determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

3. General Requirements for Issuing 401 Water Quality Certifications or Waste Discharge Requirements

In order to issue a 401 Water Quality Certification or Waste Discharge Requirements for the Proposed Project the following items are required:

- a) A signed and dated Central Valley Regional Water Quality Control Board Section 401 Water Quality Certification Application Form, completed as instructed in each section of the form. The Section 401 Water Quality Certification Application can be located at:

http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml

- b) A finalized project description detailing all project activities, including, but not limited to, all permanent and temporary impacts to waters of the State or waters of the United States, such as fill types and volumes, excavation types and volumes, and locations of culvert work, diversions, dewatering, and potential habitat or water quality impacts.
- c) A description of any other steps that have been or will be taken to avoid, minimize, or compensate for loss of significant adverse impacts to beneficial uses of the waters of the State.
- d) A copy of the Notice of Determination, Draft and Final Environmental Impact Reports, Mitigation Monitoring and Reporting Plan, Resolution adopting the CEQA environmental documentation, and Statement of Overriding Consideration.
- e) A copy of the Department of Fish and Game (DFG) Streambed Alteration Agreement application or written correspondence from DFG stating this permit is not required for the Proposed Project.
- f) A copy of the USACOE 404 permit application or written correspondence from the USACOE stating this permit is not required for the Proposed Project.
- g) A wetland delineation is discussed in Chapter 4, Section 4.4.6.2 (pp. 4.4-69 through 4.4-71). The wetland delineation should include, but not be limited to, all waters of the State, including isolated waters, and waters of the United States. Waters of the State and waters of the United States may include, but not be limited to, all permanent and temporary water bodies, such as rivers, creeks, streams, lakes, reservoirs, vernal pools, playas, potholes, wet meadows, marshes, mudflats, sandflats, fens, natural ponds, swamps, seasonal wetlands, riparian woodlands, sloughs, floodplains, and bogs located within the entire Proposed Project area. The wetland delineation should contain a map or series of maps covering the entire Proposed Project area illustrating all permanent and temporary impacts to waters of the State and waters of the United States.

Copies of a comprehensive preliminary wetland delineation and any other documentation submitted to any state or federal agency delineating waters of the State or waters of the United States should be submitted as part of the 401 Water Quality Certification application package.

- h) A copy of the jurisdiction determination letter from the USACOE.
- i) Photos and maps of the Proposed Project site illustrating the Proposed Project area and any locations where permanent or temporary impacts to waters of the State or waters of the United States will occur, including, but not limited to, culvert, fill and excavation locations.
- j) A minimum of \$640.00 processing fee is required; however, additional fees in accordance with Title 23 CCR § 2200 (a)(2) may also be required. Please use the fee calculator at http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/dredgefillfeecalculator.xls to determine the total fee.

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A copy of the fee calculator sheet should be submitted with the application package and check.

Please include a check payable to the State Water Resources Control Board.

- k) If compensatory mitigation is required by any state or federal agency, compliance with compensatory mitigation requirements is required, or a USACOE approved mitigation plan.
- l) If the USACOE conducts an Endangered Species Section 7 consultation with the National Oceanic Atmospheric Administration fisheries and/or the United States Fish and Wildlife Service, a copy of the Biological Opinion(s) or concurrence letter(s) from these federal agencies is required.
- m) A brief discussion of the installation, removal, replacement and/or abandonment of culverts is discussed several sections throughout the Draft Environmental Impact Report, including, but not limited to, Chapter 4, Section 4.10.2.2 (p. 4.10-12), Section 4.10.3 (p. 4.10-13), Section 4.10.6 (pp. 4.10-17 through 4.10-18, and 4.10-22), Section 4.18.2.2 (p. 4.18-3), and Section 4.18.6 (p. 4.18-7).

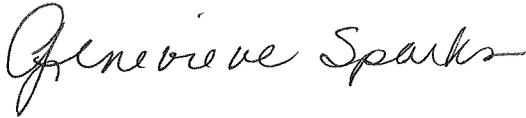
The Central Valley Regional Water Quality Control Board will require specific information on any installed, removed, replaced or abandoned culvert within the total project area. Necessary information includes a detailed description and map of the locations of the culvert work, the length and diameter of the culvert, type of culvert piping, and associated infrastructure (i.e., headwalls, wingwalls, flared ends).

The type and volume (cubic yards) of fill (i.e., riprap, concrete, clean soil, asphalt), and volume of excavated material (cubic yards) below the ordinary high water mark will need to be provided and should be consistent with the map of culvert locations throughout the Proposed Project Area.

- n) For any non-culvert work requiring fill or excavation, the volume (cubic yards) and type of material that will be installed and/or removed below the ordinary high water mark in waters of the State or waters of the United States is required. Volumes and material types should be provided for each individual impacted location within the Proposed Project area.
- o) A pre-certification meeting at the Central Valley Water Board will be required for the Proposed Project.
- p) A site visit may be required for the Proposed Project.

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If you have questions regarding these comments, please contact me at (916) 464-4745 or gsparks@waterboards.ca.gov.

A handwritten signature in cursive script that reads "Genevieve Sparks".

Genevieve (Gen) Sparks
Environmental Scientist
401 Water Quality Certification Program

cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

2.3.6 Letter F – Responses to Comments from California Regional Water Quality Control Board (RWQCB)

- F-1 This comment provides general information and does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.
- F-2 See Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.3.
- F-3 This comment requests that the EIR rely on the 2010 CWA §303(d) list. See Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.3. General information provided in this comment is noted.
- F-4 See Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.3.
- F-5 This comment provides general information and does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.



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July 18, 2011

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Please Reply To:

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Via Hand-Delivery and E-Mail

William Nelson
Principal Planner
Contra Costa County
Conservation & Development Department
651 Pine St., 2nd Floor, North Wing
Martinez, CA 94553

Re: Tres Vaqueros Windfarm Project
Comments on the Draft Environmental Impact Report (“DEIR”)
County File No. LP09-2005

Dear Will:

Thank you for giving us the opportunity to comment on the DEIR for the above-referenced project. As you know, our offices represent the Agricultural Natural Resources Trust of Contra Costa County (ANRT). Joe Ciolek, on behalf of ANRT, offered oral testimony at the hearing of Tuesday, July 6. I now submit the following written comments for the record.

I. Mission and Purpose of the ANRT

The ANRT is a nonprofit public benefit corporation formed in February, 1997. Its specific purpose is the permanent protection of agricultural lands, watersheds, habitat and related natural resources in and connected to watersheds in Contra Costa County, California, and to encourage their conservation and stewardship. Its philosophy is to work in cooperation with Landowners, Resource Agencies, Funding Sources and other similarly concerned Conservation Entities seeking to complete Ag-compatible land

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conservation transactions, with respect for private property rights, conservation standards and long-term stewardship.

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II. ANRT Conservation Responsibilities Within the Project Site

A. Authority

In March 2004, the City of Brentwood approved the Vineyards at Marsh Creek (Subdivision No. 8796, hereinafter, the “Vineyards Project”) and certified the EIR for that project. To mitigate potential impacts on red-legged frogs, tiger salamanders, and other threatened and endangered species, a Biological Opinion for the Vineyards Project (1-1-04-F-0063) was prepared and presented on October 29, 2004 by the United States Fish and Wildlife Service pursuant to Section 7 of the Federal Endangered Species Act (“Biological Opinion”). The Biological Opinion found that the Vineyards Project would result in an “incidental take of red-legged frogs, tiger salamanders, kit foxes, and fairy shrimp.”¹

As mitigation to this incidental taking, the Vineyards Project was required to implement the following conservation measures:

The applicant will acquire, and arrange for the permanent preservation and management for habitat purposes, 936 acres of property which is currently part of the Vaquero Farms ranch located approximately 2 miles south of the project site. This property provides habitat for all of the species discussed in this biological opinion. The applicant will implement the following specific tasks:

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1. Prior to initiating project grading, the applicant will acquire fee title to 936 acres currently known as Vaquero Farms in Contra Costa County east of Los Vaqueros Reservoir (Conservation Lands).
2. The Conservation Lands will be acquired, permanently preserved and managed in accordance with the *Wetland and Special-Status Species Mitigation and Monitoring Plan for the Vineyards at Marsh Creek Project (2004)*(MMP).
3. Consistent with the MMP, the applicant will acquire fee title within 30 days of issuance of this biological opinion or

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¹ Formal Endangered Species Consultation on the Proposed Vineyards at Marsh Creek Development Project in Brentwood, Contra Costa County, California (Corps File 200300007), United States Department of Interior, Fish and Wildlife Service (Biological Opinion), page 30.

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prior to initiating project grading whichever is sooner, and will convey a Conservation Easement acceptable to the Service to a governmental or non-profit entity as soon as possible but not later than June 30, 2005. A draft proposed Conservation Easement will be provided to the Service for review by December 30, 2004.²

Pursuant to and in full compliance with the above, the Vineyards Project sponsor acquired the property and granted a 936-acre conservation easement to the ANRT (the "ANRT Conservation Easement") over the described property.

The grant was authorized in the permits issued in connection with the development of The Vineyards at Marsh Creek project pursuant to Section 404 of the Clean Water Act (U.S. Army Corps of Engineers File No. 200300007), water quality certification issued by the California Regional Water Quality Control Board Central Valley Region ("RWQCB"), Lake or Streambed Alteration Agreement (Notification No. 1600-2004-0177-3) issued by the California Department of Fish and Game pursuant to Section 1602 of the California Fish and Game Code.

The California Department of Fish and Game ("CDFG"), a division of the State of California, also has jurisdiction over the conservation, protection, restoration, and management of fish, wildlife, native plants and the habitat necessary for biologically sustainable populations of these species within the State of California pursuant to Fish and Game Code §1802; the CDFG is also authorized to hold easements for these purposes pursuant to California Civil Code §815.3, Fish and Game Code §1348, and other provisions of California law.

The United States Fish and Wildlife Service ("USFWS"), an agency within the United States Department of the Interior, has jurisdiction over the conservation, protection, restoration, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of these species within the United States pursuant to the Endangered Species Act, 16 U.S.C. §§1531, et seq. ("ESA"), the Fish and Wildlife Coordination Act, 16 U.S.C. §§661-666c, the Fish and Wildlife Act of 1956, 16 U.S.C. §§742(f), et seq., and other provisions of Federal law.

In cooperation with the above agencies, the Biological Opinion vests in the Conservation Easement holder (ANRT) the responsibility for protecting and managing the Vaquero Farms easement area as a mitigation site for the red-legged frog, in order to provide breeding, dispersal and upland habitat. The ANRT Conservation Easement will also serve as a habitat for tiger salamanders, kit foxes, and fairy shrimp.

² Biological Opinion, Page 7.



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B. ANRT Duties Under the Management Plan

The ANRT has considerable responsibility under the above-cited authorities. The ANRT's duties in managing the ANRT Conservation Easement are specifically spelled out in the Long-Term Management Plan Vaquero Farms Conservation Easement, Contra Costa County, California (the "Management Plan").³ The Management Plan places responsibility for the long-term maintenance, monitoring and management of the ANRT Conservation Easement in the hand of the ANRT, including the following:

- Fire hazard reduction and management through cattle grazing
- Annual administration, i.e., accounting, funding management, educational materials, and management of grazing leases
- Replacement/repair of fences and gates for perimeter and managed grazing areas-complete replacement of four-strand fencing likely to occur approximately every 20 years
- Maintenance of permanent signage
- Maintenance of stock ponds (i.e., berm repairs) and spring boxes for watering cattle-this may include periodic sediment removal in the created wetland areas to ensure long-term sustainability
- Monitoring of Conservation Easement compliance, including inspections of the site three times a year (April/May, August, and December) by a qualified biologist to evaluate adherence to the long-term management plan and identify and employ adaptive management strategies as necessary.⁴

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III. Comments on the Draft EIR Pertaining to the ANRT Conservation Easement

The DEIR does mention the fact that the ANRT holds a conservation easement over a portion of the Project site:

In February, 2008, a conservation easement deed was recorded with Contra Costa County as part of the Agricultural Natural Resources Trust of Contra Costa (E&E 2009). The easement covers central portions of the area now owned by EBRPD, and was placed on the property to serve as mitigation for

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³ USFWS File Number 1-1-04-F-0063; USACE File Number 200300007; CDFG File Number 1600-2004-0177-3; RWQCB WDID#5B07CR00031, prepared by Sycamore Associates, LLC, dated May 26, 2005, revised February 15, 2007.

⁴ Management Plan, Page 1.

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development of an off-site parcel. The easement serves to ensure the property is managed for the benefit of listed species including California red-legged frog, California tiger salamander, San Joaquin kit fox, and western burrowing owl—a Species of Special Concern in California. The easement does allow for wind farm activities such as turbine replacement, removal, repair, and maintenance, and related improvements.⁵

The above statement is true, but incomplete. The ANRT Conservation Easement sets forth specific rights and obligations of the ANRT in furtherance of the Easement’s purpose. In pertinent part, the ANRT Conservation Easement provides as follows:

Rights of Grantee. To accomplish the purposes of this Conservation Easement, Grantor hereby grants and conveys the following rights to Grantee, along with the right of enforcement to the CDFG and the USFWS or their designee as third party beneficiaries hereof, consistent with the Conservation Instrument:

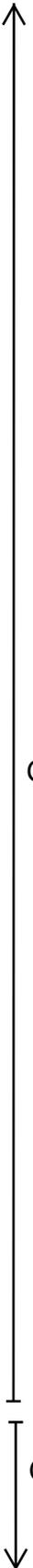
...

C. To prevent any activity on or use of the Property that is inconsistent with the habitat conservation purposes and terms of this Conservation Easement and to require the restoration of such areas or features of the Property that may be damaged by any act, failure to act, or any use or activity that is inconsistent with the purposes and terms of this Conservation Easement. Grantee may compel Grantor to restore any areas or features damaged as a result of Grantor’s failure to act, or use or activity that is inconsistent with the purposes of this Conservation Easement. Grantee may also compel any person or entity (collectively “damaging party”) to restore any areas or features damaged as a result of the damaging party’s failure to act, or use or activity that is inconsistent with the purposes of this Conservation Easement.⁶

While it is true that the ANRT Conservation Easement allows for wind farm activities within the easement area, it should be stated clearly in the EIR that the right to engage in these activities is subject to certain provisions:

⁵ DEIR, Section 4.4.2.1, page 4.4-6.

⁶ ANRT Conservation Easement, Paragraphs 2 and 2.C (*emphasis added*).



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Grantor reserves to itself, personal representatives, heirs, successors, grantees, assigns and lessees, the right to...renew and/or extend existing leases or enter into new leases related to the operation of wind turbine generators and related improvements, provided such renewals, extensions, or new leases are on the same or substantially the same terms as the current leases, and provided that Grantor shall use its best efforts to preclude any future lessees from engaging in any landscaping or land contouring activities, improving any springs, or constructing dams, drainage facilities, or storage tanks...⁷

The ANRT Conservation Easement further restricts activities within the easement area:

3. Prohibited Uses. Any activity on or use of the Property inconsistent with the conservation purposes of this Conservation Easement and the Conservation Instrument is prohibited. Without limiting the generality of the foregoing, Grantor, its personal representatives, heirs, successors, assigns, employees, agents, lessees, licensees and invitees are expressly prohibited from doing or permitting any of the following on the Property unless authorized by the Conservation Instrument, Conservation Easement, or any related Management Plan:

...

F. Filling, dumping, excavating, draining, dredging, mining, drilling, removing, exploring for or extracting minerals, loam, gravel, soil, rock, sand or other material on or below the surface of the Property, or granting or authorizing surface entry for any of these purposes.⁸

The DEIR does not explain in sufficient detail the significance of the ANRT Conservation Easement, the limitations on land uses associated with the Easement, and the specific steps that must be taken by the project proponent in order to prevent the frustration of the conservation purpose of the Easement. Further, while the DEIR does mention the ANRT Conservation Easement as quoted above, there are no project impacts identified pertaining to the existing and potential threat that the Project poses to the conservation efforts outlined in the Easement and Management Plan and no mitigation measures for these impacts are provided. While the ANRT Conservation Easement does

⁷ ANRT Conservation Easement, Paragraph 5.1 (emphasis added).

⁸ ANRT Conservation Easement, Paragraphs 3 and 3.F.



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provide for judicial remedies and corrective actions in the event of a violation of its terms,⁹ it is more appropriate to address these concerns in the CEQA process for the Wind Farm Repowering Project, by instituting specific mitigation measures designed to protect the Easement and its purpose.

IV. Impacts of the Protect on the ANRT Conservation Easement

The primary concern with the proposed project is the potential for erosion to take place within the ANRT Conservation Easement and surrounding area, and the resulting siltation to enter the wetland area of the Easement. The roadway system currently servicing the existing wind farm has deposited substantial amounts of sediment downstream of the roads. This has a profound effect on the water quality and the viability of the water system as a protected habitat. Further construction will exacerbate the water quality problem, and more roadways are proposed on the site.

The problem with sedimentation is two-fold. First, it affects the water quality and its suitability for species protection. Second, the ANRT, as Easement holder, is responsible for the ongoing maintenance, including the careful removal of sediment from the waterways. This is a time-consuming and expensive process and a drain on the ANRT's resources. ANRT is capable of performing such maintenance, but if ANRT is made to incur additional maintenance and management costs for the Easement, some system of remuneration must be implemented for this extra work.

V. Mitigation Measures to Protect the ANRT Conservation Easement

To assist in formulating appropriate mitigation measures for the impacts to the ANRT Conservation Easement, the ANRT solicited comments from two experts in resource management and preservation, Robert Nuzum and Jeff Alvarez. Their letters to the ANRT are attached, and both are to be included with this letter and made a part of the record hereby. Attachment 1 is a letter from Robert C. Nuzum dated July 12, 2011 ("Nuzum Letter"). Mr. Nuzum is the Owner and Lead Scientist for Applied Natural Resource Management. He has 40 years of experience managing comprehensive natural and cultural resource management programs in Alameda and Contra Costa Counties, including the design, construction and maintenance of unpaved roads and drainage facilities on East Bay Municipal Utility District (EBMUD) and Contra Costa Water District (CCWD) lands. Further detail regarding Mr. Nuzum's credentials are provided in his letter. Mr. Nuzum recommends several mitigation measures to the sedimentation impacts, and the ANRT agrees that these should be implemented:

⁹ ANRT Conservation Easement, Section 6.



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My recommendation would be to select the best design for the refurbished wind farm roadways and new roadways that would incorporate several design mitigation features as follows:

- a) reduce cut and fill to the maximum extent practical (this would seem to eliminate insloped roadways that have substantially more cut and fill associated with them;
- b) do not exceed a slope of 2% to 4% regardless of it being an in-sloped or out-sloped roadway (best to have them at 2%);
- c) install rolling dips (1%) whenever and ONLY when the roadside drainage flows can be directed to an immediately adjacent natural drainage way; and
- d) if a natural drainage way is not available and a culvert must be installed under the roadway then the culvert must be extended to the bottom of the hill slope and fitted with an energy absorbing device and rock rip-rap to ameliorate the impacts associated with erosive flows.¹⁰

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In addition, Mr. Nuzum’s letter outlines several design and maintenance guidelines for the construction and maintenance of the roads. The ANRT agrees that these guidelines should also be incorporated into mitigation measures and implemented to the extent possible:

- 1. Roads should not be built up a slope exceeding 15%, except for a short pitch of less than 500 feet;
- 2. New road alignments should use grades of 3% to 5% or less;
- 3. Cut flat bottomed ditches (if installing insloped roads), not “V” bottomed ditches – less subject to scour;
- 4. Use 18” diameter relief culverts (never less than 12”) and install at a slope of 2% and at a 30% angle to the ditch line to minimize inlet erosion;
- 5. Run culvert collection to bottom of hillslope and never “shotgun” it out of the fill creating erosive waterfalls;

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¹⁰ Nuzum Letter, Page 10.

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6. Shallow (1%) rolling dips, installed in outsloped roads, will guarantee that surface runoff does not concentrate on the road surface;
7. Soils with moderate to high erosion ratings require slopes of 10% or less and with waterbreaks of 150 or 200 feet, respectfully;
8. Routine grading of all weather roadways is not necessary or desirable but routine inspections to maintain culverts free of debris and being proactive with trouble shooting the roadway system can avoid future problems;
9. Road surface drainage should be sent through a filtering area or buffer strip with enough ground cover to catch any sediment coming from road runoff.¹¹

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The ANRT hereby endorses the other comments in Mr. Nuzum’s letter. In addition, Attachment 2 is a letter from Jeff Alvarez dated July 10, 2011 (“Alvarez Letter”). Mr. Alvarez is the founder of The Wildlife Company, a small company specializing in NEPA/CEQA environmental compliance, technical field surveys, mitigation development and monitoring, special-status species surveys and habitat evaluations, biological assessments, survey and monitoring technique development, and biological consultation. Mr. Alvarez has 16 years of experience working with the Los Vaqueros Watershed and is uniquely qualified to comment on its ongoing preservation. The Alvarez Letter also identifies specific impacts of the proposed project and lists in his letter several recommended mitigation measures pertaining to the protection of the ANRT Conservation Easement:

Potential Mitigation Measure 1: Pattern Energy shall provide funds for, or in cooperation with the ANRT and the USFWS, remove current silt loads from aquatic breeding habitat. Additionally, Pattern Energy shall maintain the site in a manner that eliminates, to the greatest extent possible, the movement of silt into aquatic breeding habitats over time. If this is not practicable, Pattern Energy shall provide funds for, or conduct maintenance activities in aquatic breeding habitat that will result in a reduction of excess silt and vegetation as deemed necessary by the ANRT and the USFWS.

Potential Mitigation Measure 2: Pattern Energy shall provide funds for, or in cooperation with the ANRT and the USFWS,

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¹¹ Nuzum Letter, Page 11.

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remove current silt loads from aquatic breeding habitat. Additionally, Pattern Energy shall maintain the site in a manner that eliminates, to the greatest extent possible, the movement of silt into aquatic breeding habitats over time. If this is not practicable, Pattern Energy shall provide funds for, or conduct maintenance activities in aquatic breeding habitat that will result in a reduction of excess silt and vegetation as deemed necessary by the ANRT and the USFWS.

Potential Mitigation Measure 3: Pattern Energy shall maintain the site in a manner that eliminates, to the greatest extent possible, the movement of silt into aquatic breeding habitats over time. This may include, but would not be limited to, installing waddles (made of jute and straw, or other natural materials; to the exclusion products that include monofilament) around barren areas that are maintained to prevent fire hazard.

Potential Mitigation Measure 4: Pattern Energy shall maintain the site in a manner that eliminates, to the greatest extent possible, the movement of silt into aquatic breeding habitats over time. This may include, but would not be limited to, installing waddles (made of jute and straw, or other natural materials; to the exclusion products that include monofilament) around barren areas that are maintained to prevent fire hazard.¹²

In addition, Mr. Alvarez points out that the proposed project will have a long-term effect on the ANRT Conservation Easement, and that additional maintenance operations will be necessary in order to preserve its long-term viability:

The DIER did not fully consider the long-term management constraints of a portion of the site, which is not the responsibility of the current landowner, but is instead the financial responsibility of the ANRT (See page 4.4-6). The ANRT has relatively fixed fiscal constraints for annual stewardship and management responsibilities. The project may have a fiscal impact on the ANRT's ability to maintain the site due to the following changes proposed in the DEIR:

- Changes in road locations (access to the site will be more limited),

¹² Alvarez Letter, Pages 2-5.



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- Restricted access to the site during construction;
- Changes in and/or need for additional fencing, gates, locks, chain;
- Potential changes in the amount of litter and debris clean up;
- and other unforeseen activities, potential increases in sediment loads in special-status species aquatic breeding habitat.¹³

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Mr. Alvarez estimates in his letter that the cost of the necessary silt removal, including equipment rental, silt disposal, vegetation disposal, permitting needs, monitoring needs, and incidental costs, would be \$15,000 to \$20,000 per pond for each 10-year period.¹⁴ The ANRT is equipped and capable of performing this maintenance work; however a system must be in place for the Project proponent to pay for this work, whether or not they elect to use ANRT.

Conclusion

We appreciate this opportunity to comment on the DEIR and to work with the County and Pattern Energy to protect the valuable resources of the ANRT Conservation Easement. We look forward to including Pattern Energy among our partners in our ongoing efforts to preserve our natural heritage. Implementation of the recommended mitigation measures above will allow the vital work of the ANRT to continue without significantly affecting the viability of the proposed project. Please review and incorporate the recommended mitigation measures in the Alvarez and Nuzum letters into the Final EIR.

Very truly yours,



Martin E. Lysons

MEL

Attachments:

1. Nuzum Letter
2. Alvarez Letter

¹³ Alvarez Letter, Pages 5-6.

¹⁴ Alvarez Letter, Page 6.

ONE

July 12, 2011

Joseph Ciolek, Executive Director
Agricultural and Natural Resource Trust
P.O. Box 6224
Concord, Ca 94524

Dear Joe,

The following comments are provided on the Tres Vaqueros Wind Farm Project DEIR (County File No. LP09-2005).

CEQA Section 15204C requires reviewers to explain the basis of their comments and to support their data or references with facts, reasonable assumptions based on facts, or expert opinion supported by facts.

- 1) **The Project Description** - Indicates the Project Applicant plans to replace 91 existing wind turbines in East County and the infrastructure supporting these wind turbines with 21 larger turbines, a number of miles of new and widened roadways and other support facilities. The new turbines will produce 42 MW of wind power energy, estimated to be 38% greater than what is now possible. This repowering effort would meet state and local energy objectives for increasing energy produced by wind turbines. I personally support this repowering effort as long as it can be done with minimal environmental impact on sensitive habitats and listed and locally rare vertebrates, invertebrates and plants. It also provides an opportunity to rectify substantial environmental impacts associated with the existing wind farm roads and facilities.
- 2) **Project Components** - One of the most important components from an ecological standpoint includes: (A) the construction of 8.1 miles of new 'all-weather graveled roads'; (B) the improvement and widening of

G-11

G-12

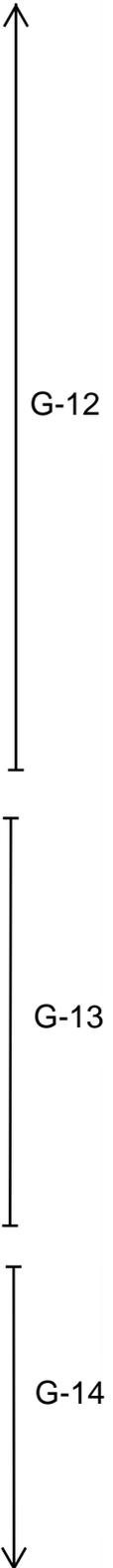
2.2 miles of existing 'all-weather graveled roads'; (C) the decommissioning of some unknown number of miles of existing 'all-weather graveled roads'; (D) the long-term maintenance of this new system of roadways, culverts and rolling dip drainage ways; and, (E) the need to remove sediment trapped in downstream aquatic systems on a routine basis over time to retain the viability of these wetlands to meet conservation objectives.

One of the key environmental impacts associated with the existing wind farm is damage caused by its access roads, drainage ditches and culvert collection and transport systems. These facilities have been responsible for substantial and long-term impacts to downstream aquatic systems. Therefore, (page 10 and pages 60-66) one of the key Project Objectives should be to:

Minimize downstream impacts to ephemeral and/or intermittent creeks, ponds and wetlands to the maximum extent possible.

- 3) **Environmentally Superior Alternative** (Page 16) - (Cal Code of Regs, Section 15123) - I believe it is questionable if Alternative 1 is the superior alternative, especially regarding a Less-Than-Significant level of impact. Considering that this alternative would potentially have the greatest GROUND DISTURBANCE and the impacts associated with very large construction equipment: The potential is great to have substantial additional soil erosion and its adverse effects on sensitive downstream environments and listed and locally rare plants, vertebrates and invertebrates.

- 4) **Mitigation Measure 4.4** (Page 25) - This mitigation measure, in my view, is not specific enough to evaluate the key provisions of the Stormwater Pollution Prevention Plan (SWPPP) to determine its acceptability. It is clear from the downstream damage caused by sediment created by the existing wind farm facilities (Initial Project) that the prior protections provided by the wind farm owners and approved by the County have failed.



The downstream sensitive habitats for alkali wetlands, alkali grasslands and wetlands (Figure 4.4-3) have been substantially impacted by sediment created by the existing wind farm facilities (Initial Project) and remediation has not been forthcoming.



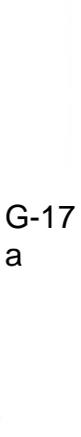
- 5) **Regarding Impact 4.4-11** (Page 38) - The comments made that the mitigation measures identified would reduce the impacts to downstream jurisdictional wetlands or water and streambeds and banks to "Less-Than-Significant with Mitigation" may or may not be accurate. However, before we can agree on what the BMP's are for the Proposed Project we need to find out why the existing wind farm facilities impacted downstream aquatic resources to such a great extent and what will be done to remediate those conservation easement resources.



- 6) **Mitigation Measure 4.10-3a** (Page 49) - This mitigation measure does not provide optimum protection due to the potential for wet period work. Construction activities should NOT be allowed on any of these watershed lands during the wet period. My personal experience with wind farm and PG&E maintenance and replacement work on these watershed lands during the wet period is dismal at best and must be avoided. This experience clearly indicates that rainy season mitigation practices outlined in 1-11 often fail, resulting in poor downstream water quality. In my professional opinion those practices identified for the "wet period" on slopes above 30% should be required during the dry period and on all slopes above 10% on these watershed lands.



- 7) **Mitigation Measure 4.10-3b** (Page 51) - Drainage Management Plan: The Drainage Management Plan must carefully scrutinize whether the construction of Project roadways should be insloped or outsloped to minimize erosion. Crowned roadways are mentioned but the justification for this type of roadway is questionable. In my professional experience with this watershed outsloped roads offer substantial advantages to the environment and to the Project Applicant (reduces costs substantially) but must not exceed 2% and berms along the outboard edge of the roadway cannot be allowed. If insloped roadways with interior



ditches are selected the roadways should not exceed 2% and all culverts MUST be extended to the bottom of the hillslope and the energy of the water eliminated by culvert structures and rock-rip-rap to avoid any erosive flow. When rolling dips can be added they MUST be flat bottomed and ONLY added where runoff water can be shunted into a natural drainageway.

- 8) **Impact 4.11-1** (Page 52) - The existing wind farm project has created impacts for the Agricultural - Natural Resource Trust conservation easement resources, approved by the USFWS. The proposed Repowering Project has a great potential to exacerbate the monitoring and management of these downstream wetlands.
- 9) **Cumulative Impacts** (Page 56) - The impacts associated with constructing and maintaining Project Area roads, drainage ditches and culvert collection and transport systems has not been included and needs to be added to the Final EIR.
- 10) **Road Grading and Installation** (Page 77) - Gravel used for ALL road construction, reconstruction and maintenance should only be "clean-washed" road base gravel. Road cut fill must be compacted and seeded with a local range mix - see Pacific Coast Seed "Los Vaqueros Mix". Re: Paragraph 2 - what constitutes ... "appropriate erosion control devices would be installed or completed" ? All road-base clean and washed gravel must be watered and rolled into place to a thickness of at least 6 inches and preferably more with the heavier transport and generating equipment indicated.
- 11) **Road Alignment** (Page 78) - Proposed inslope or crowned roadways may not be a BMP for these watershed lands. However if insloped roadways are selected the culverts must be extended to the bottom of the hillslope with structures and rip-rap installed to eliminate erosive flows.
- 12) **Restoration** (Page 81) - Native seed mix should be a local blend of annual and perennial plant seed. See Pacific Coast Seed in Livermore - for "Los Vaqueros Mix".



- 13) **Project Operation and Maintenance Plan and Orientation and Training** (Page 86) - There is an Ordinance (01-01) that regulates what can and cannot be done on the Contra Costa Water District lands. These regulations protect natural and cultural resources and the public and staff who are utilizing these lands and waters in accord with the law. Violators can be cited by CCWD staff who have citation authority. I would suggest that the Project Applicant should obtain a copy of said Ordinance and make it available to the Project O&M staff so they can see what can and cannot be done on CCWD property.
- 14) **Road Maintenance** (Page 90) - Obviously this plan is for the protection of the road and maintaining adequate drainage. I would recommend that the description be expanded to include the functioning of the roadway and ancillary facilities to avoid downstream water quality impacts.
- 15) **Regulatory Setting** (Page 116) - In addition to the Federal, State and County regulations there are local regulations to include. Contra Costa Water District has Ordinance 01-01 and East Bay Regional Park District has Ordinance 38 for their property.
- 16) **Re: CCWD Lands** (Page 183) - In addition to the restrictions noted, the ephemeral and intermittent creeks, ponds, and wetlands downstream of the Project lands are protected habitats and cannot be impacted by upstream facilities. The same is true of the Agricultural - Natural Resource Trust's Conservation Easement area on property owned by the EBRPD (Page 184).
- 17) **Significance Criteria** (Page 209)- The existing wind farm project has had a substantial adverse effect on protected wetlands.
- 18) **Paragraph 3 on Page 234** - In part states ... "Road construction and other grading activities may contribute to changes in water quality at RLF and CTS breeding sites (Figures 4.4-7 & 4.4-8) through erosion and silt deposition." This is TRUE. This impact on

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downstream habitats and protected species has already taken place from the existing wind farm roads.

- 19) **Construction Measures** - Paragraph (ii) -- Credentials of the certified biologist selected to monitor construction should include substantial experience with Project lands and soils and their qualification to recognize failed road and drainage related facilities and what to do to ameliorate the problems encountered.

G-28

- 20) **Jurisdictional Wetlands** (Pages 249-250) - Last Paragraph - I do not believe that mitigation measures 1,3,5-9, 14 and 4.4-11 (as stated) will be capable of reducing Project impacts to a Less-Than-Significant level. This belief is founded on my first hand experience with the Project area: slopes; soils; rainfall; flashy responses of small ephemeral creeks to rainfall; erosion of unconsolidated roadbed fill, roadway surface erosion and inside collection ditch problems; and, the impacts to jurisdictional wetlands downstream over-time. In addition, the unpublished database cited to prepare Table 4.4-3 should be made available along with a site-specific map depicting the information listed.

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- 21) **Flood Potential and Drainage** (Page 339) - last paragraph and page 340 (first paragraph). These comments indicate an incomplete understanding of the localized scouring that takes place currently on the Project lands due to the existing wind farm roads, drainage collection ditches and water collection and transport culverts. In fact and to my knowledge substantial sedimentation of ephemeral creek channels, ponds and seasonal wetlands takes place on the Project lands due to existing wind farm roads and ancillary facilities. This is a long-standing impact that needs to be corrected. But in this brief paragraph these impacts are not mentioned or evaluated in this section of the DEIR?

G-30

- 22) **Surface Water Quality** (Page 341) - This paragraph does not indicate an adequate understanding of what takes place on these Project lands. And, I can factually state that most of the employees and consultants who

G-31

are most knowledgeable with the Project lands, their natural and cultural resources and impacts associated with the existing wind farm facilities were not asked for their opinion by the DEIR consultants. But, aside from this serious oversight, it is an obvious fact that the majority of the ephemeral creeks in the Project area have been severely impacted by the existing wind farm roads, drainage ditches and water collection and transport culverts for decades.

23) **A comment is made that these ephemeral creeks, ponds, and seasonal wetlands are not included in the 303(d) list of impaired segments for California** (USEPA, 2006). That may be true but it is not a legitimate reason to discount the very real erosion and siltation impacts that have occurred on the Project lands that are associated with the existing wind farm facilities and it certainly is not acceptable to not be concerned about the construction of the proposed new wind farm facilities.

24) **Provisions of the Clean Water Act** (Page 342) apply to these Project lands. And, on Page 344, the authority of the SWRCB is briefly outlined -- to protect water quality standards.

25) **The new General Construction Permit for Discharges of Stormwater Associated with Construction Activities (effective July 1, 2010)** is discussed on Page 345. The provisions of this Permit must be utilized for this Repowering Project to insure that the BMP's to reduce erosion and resulting sedimentation of downstream aquatic habitats are implemented.

Background on Project Lands from my perspective - The existing wind farm road and water collection facilities collect water and transport it in some manner to the small ephemeral creek systems, in-stream ponds and wetlands downstream. These aquatic systems hold vertebrate, invertebrate and plant assemblages, many of which are protected under provisions of the Federal and State Endangered Species Acts. Many of these downstream ecological resources are within the Vaquero Farms Conservation Easement area managed by the Agricultural - Natural Resources Trust (ANRT).



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Other ephemeral drainage ways that exist further west on the Project lands are on Contra Costa Water District (CCWD) lands and are tributary to instream ponds and wetlands that hold many listed and or locally rare vertebrates, invertebrates and plants that are being monitored under provisions of various Biological Opinions and/or Conservation Easements that were required under the initial Los Vaqueros Dam construction project or under the provisions of a "pending" new Biological Opinion that is currently being developed by the U.S. Fish and Wildlife Service.

In my professional opinion the existing wind farm roadway and drainage systems have been responsible for substantial damage to downstream waterways, holding ponds and wetlands for decades. This damage is directly related to the existing roadway system and/or the inside ditch runoff collection and conveyance systems that make up the existing wind farm roadways. This fact can be easily verified by conducting a cursory inspection of aerial photos or by taking a field trip to the Project lands that are slated for repowering.

Without serious improvements the road construction activities identified for the Repowering Project would create substantial additional adverse environmental impacts on water quality within downstream waterways, in-stream storage ponds and wetlands. And, it is not enough to develop a new Wind Farm Project with much improved protection mechanisms when so much bed load material has been deposited downstream from the existing wind farm facilities.

My professional opinion is based on 40 years of experience managing comprehensive natural and cultural resource management programs in Alameda and Contra Costa Counties (please refer to the resume attached for specifics). This experience, in-part, includes the design, construction and maintenance of unpaved roads and drainage facilities on East Bay Municipal Utility District (EBMUD) and Contra Costa Water District (CCWD) lands (hundreds of miles of unpaved roadways on 40,000+ acres in the East Bay). In general, this experience includes: (1) administration and management of the EBMUD watershed lands, reservoirs and recreation areas in the East Bay and three Sierra foothill counties (1972 to 1999); (2) administration and management of the Los Vaqueros Watershed lands and recreation areas for CCWD (1999 to 2006); (3)



G-35

G-36

preparing oversight and management documents for the Conservation Easement lands on Vaquero Farms for the Agricultural - Natural Resource Trust (2006 to present); and (4) managing the Contra Costa County owned Habitat Management Lands surrounding Byron Airport that lie 1-1/2 miles due east of the Project lands (2007 to present).

G-36

I am a zoologist and have held certification with the American Fisheries Society (Emeritus Certified Fisheries Scientist) for 35 years. I also hold other certifications and licenses that are outlined in my resume.

Key examples of Inadequate Mitigation on the Project lands:

- 1) Construction of the existing wind farm roadway system on the Project lands that initially and over time has deposited substantial amounts of fine sediment downstream of the roads constructed, impacting water quality and the viability of aquatic resources.
- 2) Construction of the inside road drainage ditches that run to culverts that divert water under the roadways but do not connect to natural drainage ways. These culverts do not extend down into the bottom of the nearest hill slope and instead just end below the downstream edge of the roadway. The result is substantial and erosive flows running down steep and unprotected hillsides, each creating rill and gully erosion and dumping tons of sediment into downstream tributaries, ponds and wetlands.

G-37

The poorly designed existing wind farm road and drainage facilities have been impacting water quality on the Project lands and adversely affecting downstream habitats for invertebrates, vertebrates and plants for decades with little if any maintenance and/or repair designed to ameliorate the cause of the problems. In addition, there has not been any plan of action implemented to remove sediment from these aquatic systems to restore conservation values since the road and drainage systems were installed many decades ago.

The downstream problems associated with the existing wind farm road and drainage systems need to be rectified. The new roadway and drainage systems being proposed must be adequately mitigated. I would recommend design and construction of a new roadway system that utilizes an all-weather gravel surface of rocked and rolled road-base gravel (clean and washed). Many miles of these special roadways have been constructed on the

G-38

Los Vaqueros Watershed to reduce road surface erosion and improve water quality parameters for waters entering ephemeral creeks, ponds and wetlands that are tributary to Los Vaqueros Reservoir, a primary drinking water supply for CCWD.

My recommendation would be to select the best design for the refurbished wind farm roadways and new roadways that would incorporate several design mitigation features as follows:

- a) reduce cut and fill to the maximum extent practical (this would seem to eliminate insloped roadways that have substantially more cut and fill associated with them;
- b) do not exceed a slope of 2% to 4% regardless of it being an in-sloped or out-sloped roadway (best to have them at 2%);
- c) install rolling dips (1%) whenever and ONLY when the roadside drainage flows can be directed to an immediately adjacent natural drainage way; and,
- d) if a natural drainage way is not available and a culvert must be installed under the roadway then the culvert must be extended to the bottom of the hill slope and fitted with an energy absorbing device and rock rip-rap to ameliorate the impacts associated with erosive flows.

G-38

Several References on constructing farm and ranch roads are worthy of mention for consideration by the Project Applicant:

1. Traveled Way Surface Shape by USDA Forest Service - Revised July 2003 - by: Jeff Moll - PE, Ronald Copstead - PE, and David Kim Johansen - Geotechnical Engineer.
2. Handbook of Forest and Ranch Roads - By William Weaver - PhD and Danny Hagans, both with Pacific Watershed Associates, June 1994.
3. The New Spin on Drainage (Wine Business Monthly) - By Chris Carr (Stoel Rives, LLP), Danny Hagans (Pacific Watershed Associates in Arcata) and George Rau (Rau & Associates Engineering), October 2004.

G-39

Over the last ten years substantial improvements in farm and ranch road design, construction and maintenance techniques have been developed to meet CDFG and SWRCB regulations. Several of these design-construction-maintenance 'tips' are pertinent for the watershed lands that will be utilized to implement this Repowering Project, as follows:

- 1) Roads should not be built up a slope exceeding 15%, except for a short pitch of less than 500 feet;
- 2) New road alignments should use grades of 3% to 5% or less;
- 3) Cut flat bottomed ditches (if installing insloped roads), not "V" bottomed ditches - less subject to scour;
- 4) Use 18" diameter relief culverts (never less than 12") and install at a slope of 2% and at a 30° angle to the ditch line to minimize inlet erosion;
- 5) Run culvert collection to bottom of hillslope and never "shotgun" it out of the fill creating erosive waterfalls;
- 6) Shallow (1%) rolling dips, installed in outsloped roads, will guarantee that surface runoff does not concentrate on the road surface;
- 7) Soils with moderate to high erosion ratings require slopes of 10% or less and with waterbreaks of 150 or 200 feet, respectfully;
- 8) Routine grading of all weather roadways is not necessary or desirable but routine inspections to maintain culverts free of debris and being proactive with trouble shooting the roadway system can avoid future problems;
- 9) Road surface drainage should be sent through a filtering area or buffer strip with enough ground cover to catch any sediment coming from road runoff; and

Remember - These watershed ephemeral or intermittent creeks are Class II Watercourses - i.e., they have fish present within 1000 feet downstream or they contain habitat for non-fish aquatic species.

G-40

Sincerely,


Robert C. Nuzum

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TWO



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10 JUL 2011

Joseph Ciolek
Executive Director
Agricultural - Natural Resource Trust of Contra Costa County
PO Box 6224
Concord, CA 94524-1224

Re: Draft EIR, Tres Vaqueros Windfarm Project

Dear Joe,

As requested, I have reviewed the Draft Environmental Impact Report for the Tres Vaqueros Windfarm Project (dated: May 2011) (Project). The context of my comments come from my understanding of the natural history needs of special-status species in Contra Costas County; 16 years experience on the Los Vaqueros Watershed managing special-status species and their habitats—partially included in the Project area; and 3 years experience on the Vineyards of Marsh Creek Mitigation Easement Area—known as Vaquero Farms, and a significant portion of which is in the Project area.

The Draft Environmental Impact Report (DEIR) considers many aspects of the potential impacts to the proposed Project. Projects such as these typically include a wide range of anticipated potential impacts that are considered and, if possible, mitigated. However, some projects are not or cannot be fully considered due to the structure of the process—the preparer of the documentation does not have all of the necessary information to fully understand the impacts. The public comment period within the CEQA process does allow for outside input. There is a great need to offer input at this time as I see several areas where the management responsibilities on the Vineyards of Marsh Creek Mitigation Easement may be in conflict with the long-term operations and maintenance activities of the proposed Project.

As you know, sites such as these require significant management to maintain federally required habitat characteristics under their respective Biological Opinions. Although the following comments will also pertain to the Los Vaqueros Watershed and lands owned by the East Bay Regional Park District, the focus of the comments will be related to maintaining the mandated environmental/biological conditions on the Vaquero Farms Conservation Easement Area (Easement Area), currently maintained by the ANRT.

G-41

The current site conditions include grasslands, wetlands (freshwater ponds and seasonal wetlands), rock outcrops, graveled and unimproved roads, wind turbines and associated infrastructures. The ANRT acquired management responsibility in 2008 with a mandate to maintain habitat for San Joaquin kit fox (grasslands), burrowing owl (grasslands), California red-legged frog (grasslands and wetlands), and California tiger salamander (grasslands and wetlands). The site conditions are appropriate for all of these species and the ANRT actively manages the site to promote the persistence of these species in perpetuity. However, the current windfarm project (heretofore: Initial Project) often confounds the ANRTs ability to manage some portions of the Easement Area for the persistence of California tiger salamander and California red-legged frog.

G-42

The Initial Project utilizes gravel roads for access. These gravel roads have been maintained with an in-slope (sloped toward the up-hill side) and utilize culverts to drain surface water from the road, back under the road, and down slope toward natural drainages. Over the course of the Initial Project life, the culverts have effectively diverted water from the roads downslope to drainages. However, this culvert placement has effectively washed many thousands of yards of soil off the slope, down into the drainages, and into the several ponds on the site that are actively managed for aquatic breeding habitat for California tiger salamander and California red-legged frog (currently 15 major gullies; Figure 1). The result has been a siltation rate that has been accelerated over time and a corresponding decrease in suitability to the breeding site for the managed species has occurred (i.e., ponds drying early due to decreased depth, increased need to remove silt, increases in vegetation due to silt deposits, etc.)(Figure 2). This increase in siltation was not likely fully anticipated at the time of the establishment of the easement and will require significant resources to remedy.

It is primarily in the context of the long-term operations and maintenance of the roadways, restored areas, turbine pads, and infrastructure (such as power poles and buildings) where I see a great inadequacy in the preparation of the DIER with respect to potential (indirect) impacts to aquatic breeding habitat for California tiger salamander and California red-legged frog. The following points should be addressed in the DEIR, and a remedy, for both short-term (construction) and long-term (operations and maintenance for the life of the project) impacts to special-status species should be mitigated.

1. The DEIR does not adequately address the issue of long-term soil erosion on special-status species aquatic breeding habitats on the site. Fine materials eroded from the roads during the dry season are likely to be mobilized during the wet season and eventually deposited into special-status species aquatic breeding habitat on the site. This build up of silt overtime will have significant biological impacts (i.e., reduce reproductive habitat suitability) to special-status species that use those sites.

Potential Mitigation Measure 1: Pattern Energy shall, provide funds for or, in cooperation with the ANRT and the USFWS remove current silt loads from aquatic breeding habitat. Additionally, Pattern Energy shall maintain the site in a manner that eliminates, to the greatest extent possible, the movement of silt into aquatic breeding habitats over time. If this is not practicable, Pattern Energy shall provide funds for or conduct maintenance activities in aquatic breeding habitat that will result in a reduction of excess silt and vegetation as deemed necessary by the ANRT and the USFWS.

G-43

Figure 1. Sample location of current site conditions, which include significant numbers of erosion gullies associated with culverts used for road drainage. Red arrows indicate culverts. Two photos showing the same culverts from 2 views.

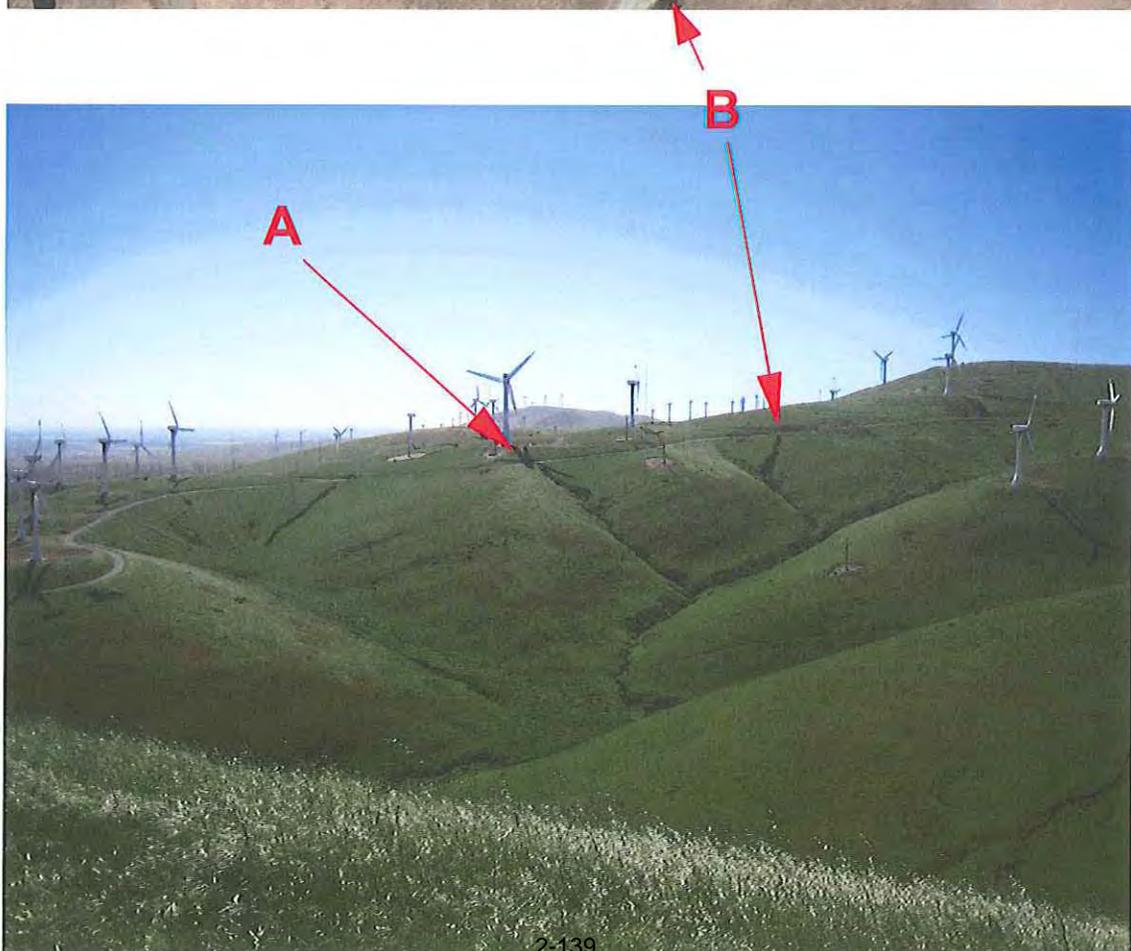


Figure 2. One of 5 ponds managed by the ANRT showing signs of excess silt from upstream activities, and indicating a significant need for silt and vegetation reduction to improve habitat conditions for special-status species.



2. The DEIR does not adequately mandate mitigation measures that would ensure that erosion from culverts used to drain maintenance roads would be adequately maintained in a manner that would eliminate gully creation over the life of the Project. It does suggest BMPs would be implemented, however, those BMPs have not adequately addressed the same concern on the Initial Project where culverts and their eroded gullies are associated nearly 100% of the time (Figure 1).

See: Potential Mitigation Measure 2: Pattern Energy shall, provide funds for or, in cooperation with the ANRT and the USFWS remove current silt loads from aquatic breeding habitat. Additionally, Pattern Energy shall maintain the site in a manner that eliminates, to the greatest extent possible, the movement of silt into aquatic breeding habitats over time. If this is not practicable, Pattern Energy shall provide funds for or conduct maintenance activities in aquatic breeding habitat that will result in a reduction of excess silt and vegetation as deemed necessary by the ANRT and the USFWS.

G-43

3. The DEIR does not adequately address erosion associated with transmission line maintenance activity. That is to say that the Initial Project has numerous transmission poles with transformers, all of which have a 20-foot diameter area cleared around the base of the pole (see upper photo Figure 1). This results in significant erosion. The erosion potential, over the 30-year life of the project, on special-status species aquatic breeding habitat on the site was not adequately addressed in the DEIR.

Potential Mitigation Measure 3: Pattern Energy shall maintain the site in a manner that eliminates, to the greatest extent possible, the movement of silt into aquatic breeding habitats over time. This may include, but would not be limited to, installing waddles (made of jute and straw, or other natural materials; to the exclusion products that include monofilament) around barren areas that are maintained to prevent fire hazard.

G-44

4. The DEIR did not adequately address the potential of roadbed erosion from new road construction. New roads are proposed upslope of special-status species aquatic breeding habitat on the site. The construction of these new roads will have the potential to mobilize large amounts of fine soil particles over long periods of time. The effects of that eroded material moving down slope into special-status species aquatic breeding habitat on the site will be substantially negative.

Potential Mitigation Measure 4: Pattern Energy shall maintain the site in a manner that eliminates, to the greatest extent possible, the movement of silt into aquatic breeding habitats over time. This may include, but would not be limited to, installing waddles (made of jute and straw, or other natural materials; to the exclusion products that include monofilament) around barren areas that are maintained to prevent fire hazard.

G-45

5. The DIER did not fully consider the long-term management constraints of a portion of the site, which is not the responsibility of the current landowner, but is instead the financial responsibility of the ANRT (See page 4.4-6). The ANRT has relatively fixed fiscal constraints for annual stewardship and management responsibilities. The project may have a fiscal impact on the ANRT's ability to maintain the site due to the following changes proposed in the DEIR:

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- Changes in road locations (access to the site will be more limited),
- Restricted access to the site during construction;
- Changes in and/or need for additional fencing, gates, locks, chain;
- Potential changes in the amount of litter and debris clean up;
- and other unforeseen activities, potential increases in sediment loads in special-status species aquatic breeding habitat.

↑
G-46

My reading of the DEIR does indicate that the areas noted above are lacking in realistic consideration of not only the ANRT management and fiscal constraints, but also the biological conditions and long-term management needs on the site. In my 16 years of experience at the Los Vaqueros Watershed, silt and vegetation removal greatly increases the suitability of the aquatic breeding habitat for both the California tiger salamander and the California red-legged frog. These types of activities appear to have few negative effects on populations, but do show significant positive effects on both species. Based on those data, it is easy to conclude that continued silt deposition would reduce habitat suitability over time.

G-47

The cost of this type of management activity can be high when considering the actual silt removal, equipment rental, silt disposal, vegetation disposal, permitting needs, monitoring needs, etc. My guess would include something in the area of \$15,000 to \$20,000 per pond for each 10-year period you would be considering. Those figures would be in the context of the current level of siltation, which, I predict, would continue.

G-48

If you have any questions regarding my comments on the potential impacts of the proposed Project on your management activities and responsibilities, I am available to assist you.

I hereby certify that the statements furnished above, and in any attached exhibits, represent the data and information required for this assessment and that the facts, statements, and information presented herein are true and correct to the best of my knowledge and belief.

Signed Jeff Allaway Date 10 July 2011

2.3.7 Letter G – Responses to Comments from Gagen McCoy (for Agricultural Natural Resources Trust of Contra Costa County)

- G-1 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.
- G-2 Comments noted. The additional information is appreciated regarding the ANRT Conservation Easement history, responsibilities within the Project area, and duties under the management plan. See Section 2.2.2, *Master Response on CEQA Issues*, subsection 2.2.2.2.
- G-3 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.3. The County notes the additional information on the ANRT easement provided by the commenter.
- G-4 See Response G-3.
- G-5 The commenter is correct that the DEIR could contain more detailed information on the ANRT conservation easement and its significance. However, the DEIR acknowledges the existence of the easement (and others) and identifies all environmental impacts that would occur within the Project area, including those that would occur within the easement. For additional discussion on the ANRT conservation easement, see Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.3.
- G-6 The County notes the summary of concerns of the commenter. These are addressed specifically in subsequent responses to this letter; see Responses G-7 and G-43.
- G-7 The County believes that the mitigation measures presented in this EIR are sufficient and notes that the commenter makes no claim that the DEIR analysis is inadequate or inaccurate. The commenter's suggested mitigations have been reviewed and considered by the Project Applicant, and some of these elements voluntarily have been incorporated into the roadway and drainage design. Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*, Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.2, and Section 2.2.4, *Master Response on Hydrology*.
- G-8 See Response G-7.
- G-9 Comment G-9 presents a summary of comment G-43. See Response G-43.
- G-10 Comment G-10 presents a summary of comments G-46 through G-48. See responses to comments G-46 through G-48.
- G-11 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.

- G-12 The conditions described in the comment were properly considered in the DEIR as part of the Project baseline condition. Under CEQA, the County only has authority to impose mitigation measures for Project impacts, not to correct existing conditions. Also see Response G-7 for additional responses regarding changes to the Project that have been incorporated into this FEIR.
- G-13 The County notes the commenter's opinion that it would not choose Alternative 1 as the Environmental Superior Alternative based on the view that "this alternative would potentially have the greater GROUND DISTURBANCE [emphasis in original] and the impacts associated with very large construction equipment." The County's reasons for choosing Alternative 1 as the Environmental Superior Alternative are set forth on page 6-22 of the DEIR and are based primarily on the fact that, of all the "build" alternatives, Alternative 1 would reduce otherwise significant and unavoidable impacts to Aesthetics, Biological Resources and Air Quality to less-than-significant levels. It is not clear why the commenter concludes that Alternative 1 would have the most ground disturbance since the other alternatives include not just decommissioning the existing turbines, but also adding new turbines, which will involve additional ground disturbance above and beyond the decommissioning.
- G-14 Mitigation Measure 4.4 states that a stormwater pollution prevention plan (SWPPP) shall be submitted to the County for review and approval as described in DEIR Section 4.10, *Hydrology and Water Quality*. Contained in Section 4.10 are mitigation measures 4.10-3a and 4.10-3b, which require preparation of a SWPPP and a Drainage Management Plan, respectively, and state the requirements for these plans. Mitigation measures 4.10-3a and 4.10-3b have been modified in response to comments received on the DEIR. See Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2, for information on the modifications to these mitigation measures.
- G-15 This comment presents an opinion that does not identify specific inadequacies or inaccuracies in the DEIR's analysis.
- G-16 See Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2 and Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*.
- G-17a See Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2 and Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*.
- G-17b Regarding impacts from the existing windfarm, see Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.2. Regarding impacts to the ANRT conservation easement resources, see Response G-7.
- G-18 The cumulative operational impacts of the Project are discussed in Section 5.4.3.10 on page 5-23 of the DEIR. See also Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2.

- G-19 Regarding the suggestion to use clean-washed gravel, see Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2. Regarding the road-base thickness, the County will require a design that is adequate to support the imposed loads. The County will consider the suggested seed mix and supplier when determining the appropriate assemblage of native vegetation suitable to the area as described in the DEIR, Section 4.4, *Biological Resources*, Section 4.4.6.1 General Biological Resources Mitigation Measures (16).
- G-20 See Section 2.2.1, *Master Response on the Environmentally Preferred Alternative* and Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2. The Project would not build insloped roadways.
- G-21 Comment noted. The County will consider this seed mix and supplier when determining the appropriate assemblage of native vegetation suitable to the area as described in the DEIR, Section 4.4, *Biological Resources*, Section 4.4.6.1 General Biological Resources Mitigation Measures (16). See also Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- G-22 The reference to CCWD's Ordinance (01-01) is noted. The County notes that Section 6.20.030 (4) of the CCWD Code of Regulations exempts from the rules and regulations for use of CCWD real property "persons who hold an interest in District Property who are engaged in activities expressly authorized in the terms and conditions of the instrument that created such interest." As discussed in Response A-2, the County notes that in the Amended Final Order of Condemnation, the express right to construct and operate wind turbines was reserved in Vaquero Farms, the condemnee of the land.
- G-23 The commenter's recommendation is noted. The commenter is referred to Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*, which describes an updated site layout and updated roadway designs, as well as Section 2.2.4, *Master Response on Hydrology*, which describes downstream water quality impacts from updated roadway designs. Furthermore, while the commenter recommends that more an expanded description be presented, no evidence is provided that the analyses or conclusions in the DEIR are inadequate with respect to CEQA standards.
- G-24 The commenter is referred to Response G-22. EBRPD Ordinance 38 does not apply to the operation of wind turbines under valid wind leases or easements.
- G-25 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.2 for a discussion of erosion and sedimentation, and subsection 2.2.3.3 for a discussion of conservation easements.
- G-26 The County agrees with the commenter. However, under CEQA, the County only has authority to impose mitigation measures for impacts caused by the Project, not to correct or remediate the existing adverse conditions on the landscape.
- G-27 Comment noted.

- G-28 The commenter's recommendations on the credentials of certified biologists are noted. The County will consider this in the selection of mitigation monitors for the Project.
- G-29 The commenter's disagreement with the conclusions reached by other experts in the field is noted. Ecology and Environment, Inc.'s 2009 Final Biological Resources Technical Report Tres Vaqueros Wind Re-power Project identified the total acreages of stock ponds, seasonal herbaceous wetlands, ephemeral drainages, and intermittent drainages in the Project area. Separately, in 2011, they provided temporary and permanent land-disturbance calculations. To calculate the acreage of wetlands potentially directly impacted by the Project, the County obtained GIS data from Ecology and Environment, Inc. (a consultant to the Project Applicant) and overlaid the wetlands with the land disturbance to obtain the final acreages presented in Table 4.4-3. Locational data are not provided in the DEIR because the potential direct impact is very small, amounting to less than one tenth of an acre. The database referred to by the commenter is a DEIR source document that is public record and may be obtained from the County.
- G-30 See Response G-12.
- G-31 See Response G-12.
- G-32 See Response G-12 and see the text changes in Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2.
- G-33 The commenter is correct with respect to the Clean Water Act being applicable to the Project area, and regarding the authority of the SWRCB (see Section 4.10.2.2 on page 4.10-7 of the DEIR).
- G-34 The commenter is correct that the new General Construction NPDES permit applies to the Project. This is stated on DEIR page 4.10-18. See also Mitigation Measure 4.10-1 on page 4.10-16 of the DEIR.
- G-35 See Response G-12
- G-36 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.
- G-37 See Response G-12.
- G-38 See Response G-12.
- G-39 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.
- G-40 See Response G-7.

- G-41 This comment does not identify specific inadequacies in the DEIR's analysis. This comment is noted.
- G-42 See Response G-12. This comment does not address any concern or issue specifically related to the adequacy of the DEIR.
- G-43 DEIR Section 4.4, *Biological Resources*, p.4.4-54 discusses that road construction and other grading activities may contribute to changes in water quality at aquatic breeding sites through erosion and silt deposition, and discusses this impact in the context of indirect effects that may result from the proposed action and occur later in time. Mitigation Measure 4.4-11 provides measures to avoid, minimize, and mitigate potential Project impacts on jurisdictional wetlands or waters, and streambeds and banks, including the prevention of erosion and silt deposition. DEIR Section 4.10, *Hydrology and Water Quality*, provides additional mitigation measures to prevent erosion and silt deposition over the life of the Project. Read in its entirety, the DEIR discusses the potential for erosion and sedimentation to degrade downstream aquatic California red-legged frog and California tiger salamander habitat, and provides measures to address these impacts over the life of the Project. See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.2 for further discussion regarding erosion and sedimentation, and Section 2.2.4, *Master Response on Hydrology*, which discusses drainage, erosion, sedimentation, and water quality issues, and Section 2.2.1, *Master Response on Environmentally Preferred Alternative*, which provides additional related information.
- G-44 See Responses G-12 and G-43.
- G-45 See Response G-43.
- G-46 The commenter asserts that the Project may result in fiscal impacts to the easement holder. The Project as revised and mitigated would likely improve conditions in the Project area by constructing a smaller and better-designed road network, an improved drainage and erosion control system, and fewer turbine pads. Given these improvements, it is unclear to the County how the easement holder would be adversely affected.
- G-47 ANRT fiscal constraints are not issues which can be addressed in the EIR under CEQA. The commenter's concerns regarding biological resources are addressed in Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.2 for a discussion on erosion and sedimentation and Section 2.2.4, *Master Response on Hydrology*, for related information.
- G-48 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.



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July 19, 2011

Will Nelson,
Senior Planner
Department of Conservation and Community Development
County Administration Building
651 Pine Street
Martinez, CA 94553-1229

**RE: Comments on the Tres Vaqueros Windfarm Project draft
Environmental Impact Report State Clearinghouse Number
2009032077**

Dear Mr. Nelson,

Thank you for the opportunity to comment on the draft Environmental Impact Report (dEIR) for the Tres Vaqueros Windfarm Project (Project) as proposed by Pattern Energy (Applicant). We appreciate the chance to provide our input on this regionally important Project. We are also in support of efforts to generate energy from local, renewable sources, thereby reducing impacts to air quality and helping the state to achieve reductions in greenhouse gas emissions. However, we still have some concerns and comments on the dEIR for the Project. While we believe the dEIR has largely done a good job of identifying impacts, but we also believe that it has inadequately described mitigation for some of the Project's impacts.

Summary of Main Concerns

The existing and proposed wind turbines are entirely on public land, part of it covered with a conservation easement, however the public agencies do not own the wind rights on some parcels. The dEIR should clarify the rights of all parties involved: the rights of the East Bay Regional Park District and the Contra Costa Water District as land owners and the rights of the Applicant as owner of the wind rights of the Project site (see Figures 3-1 and 3-2c from the dEIR showing Project location and ownership). What rights do the East Bay Regional Park District (EBRPD) and the Contra Costa Water District (CCWD) have with regard to repowering? In addition, there is a conservation easement over a portion of the land where the new turbines will be located. How does this affect repowering? The text of the conservation easement should be included in a revised EIR.

We also support the East Bay Regional Park District's concerns with the Project, especially as they pertain to elimination of the "A-string" turbines, weekend shutdowns of turbines nearest the areas where they conduct tours of Vasco Caves, and prohibiting use of Howden Road for construction on weekends. These

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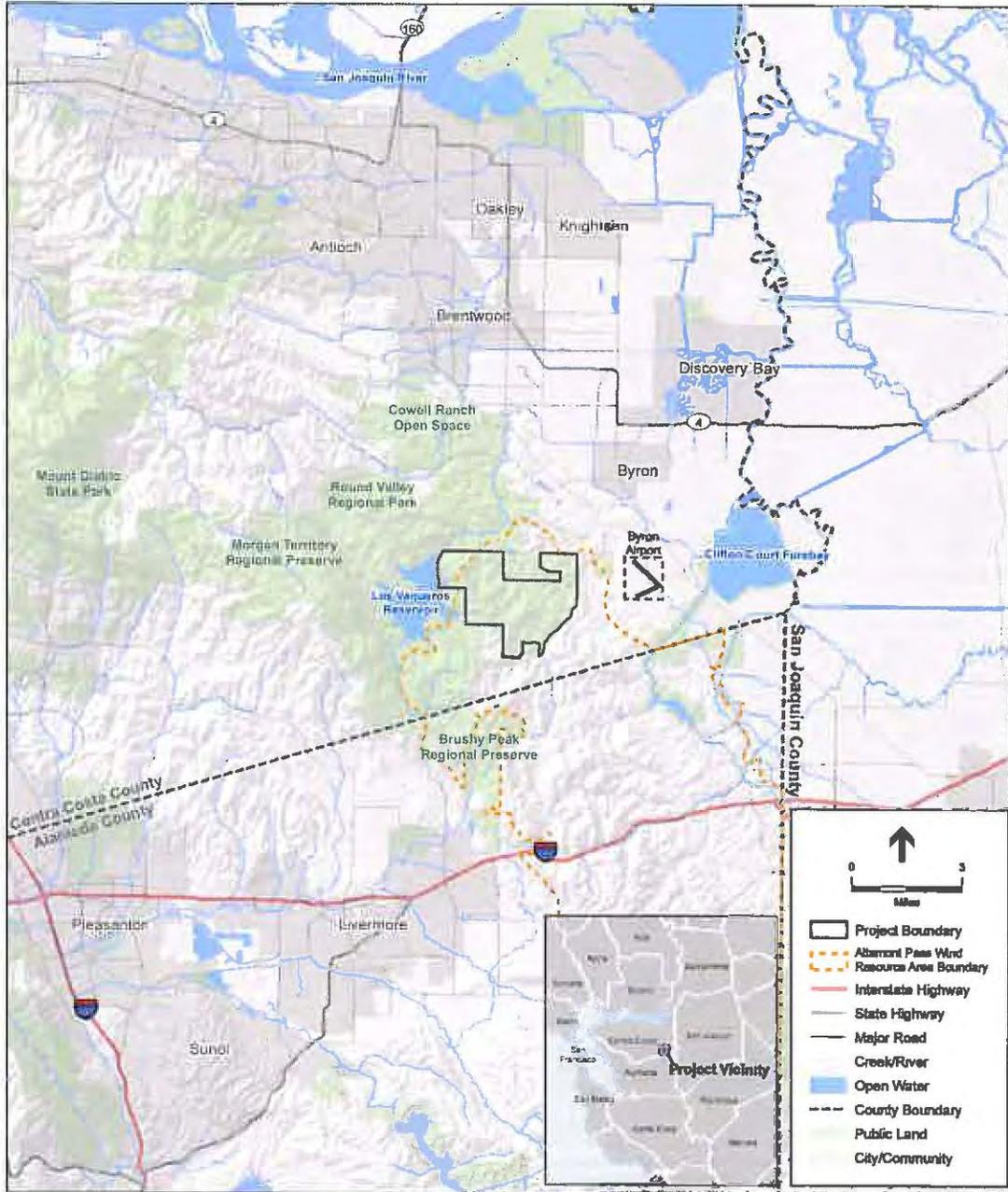
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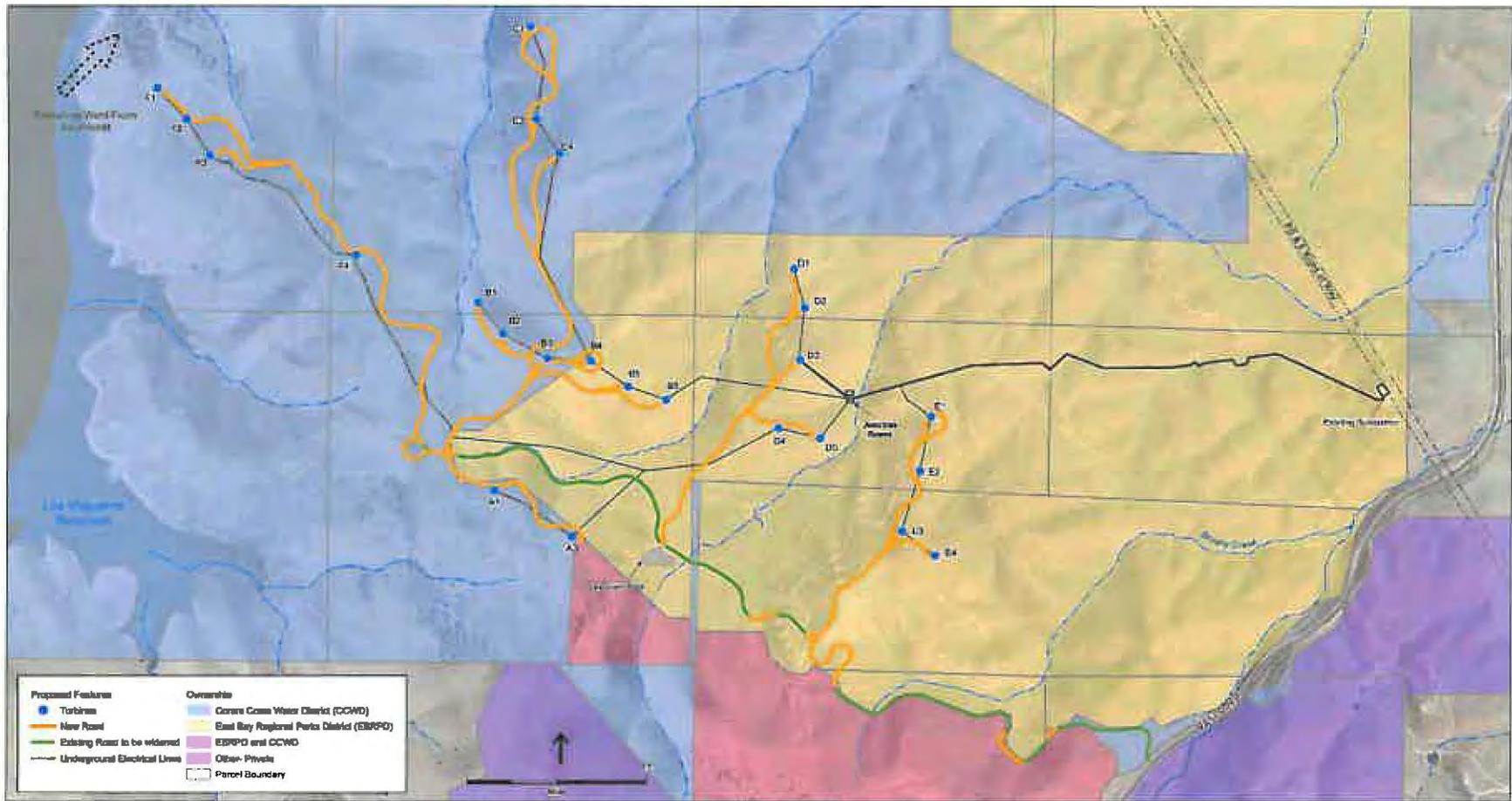


SOURCE: ESRI, 2010

Tres Vaqueros Windfarm Repowering Project . 209132
Figure 3-1
 Project Vicinity Map

SMD Tres Vaqueros deIR Comments

2-150



SOURCE: PERMCO, 2009; County of Contra Costa, 2009

Notes: 1. Locations are approximate.
2. While 24 turbine site locations are shown, only 21 turbines will be installed

Tres Vaqueros Windfarm Repowering Project, 209132.02
Figure 3-2c
Property Ownership with the Repowered Project

measures would go a long way toward reducing the Project’s impacts on sensitive cultural resources and users of open space. We also agree that stormwater management on unpaved roads would be better achieved through outslipping of roads allowing dispersal of runoff, rather than in-sloping roads, thus concentrating runoff in ditches and culverts.

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As we explain below, since the Project substantially increases production capacity and the micro-siting of the turbines is based on an as-yet unverified model and preliminary avian mortality data, we suggest that the Project be limited to its original nameplate production capacity. Alternatively, if that is not feasible, then the Project proponent should explore various ways of phasing the construction of new turbines, such that in an initial phase production capacity is limited, with addition of the rest of the turbines based on satisfactory reductions in avian mortality.

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With regard to mitigation, we have five primary concerns.

- 1) We oppose full credit for mitigation of already protected land. We generally agree that local mitigation is preferable. However, local does not necessarily mean on-site. The land impacted by the Project is already in public ownership and protected from most environmental impacts. In this case, that is doubly true, since some of the land is also under a conservation easement. Mitigation should be required for this project that provides for protection for resources on lands not already protected.
- 2) Although the Applicant cannot obtain the necessary permits for resource issues through the East Contra Costa County Habitat Conservancy (ECCCHCP), they could still make payment to the ECCCHCP for all or part of the mitigation required for the Project.
- 3) The Project should provide a suite of mitigation measures that address impacts to all of the sensitive resources that will be impacted including avian species, terrestrial animals and plants as well as cultural resources.
- 4) Throughout the dEIR, the Applicant offers nothing more than a 1:1 ratio. Most resource regulatory agencies require a minimum of 3:1. This makes the Applicant’s offer nothing more than a placeholder and does not allow reviewers to make an informed decision about the trade offs between impacts and mitigation that will be necessary to construct the Project.
- 5) All mitigation measures should include objective success criteria.

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Project Description

The Applicant is requesting a Land Use Permit for the Project to decommission 91 obsolete wind turbines and “repower” the facility by replacing them with newer, but taller turbines. The dEIR evaluates 24 different sites on roughly 20 acres of the total of more than 1,200 acres of contiguous parcels owned by the East Bay Regional Park District (EBRPD) and the Contra Costa Water District (CCWD). The Applicant plans to choose between 21 and 18 locations for the new turbines.

During a site visit on July 12, representatives of the Applicant explained that they are most likely to opt for the Siemens 2.3 megawatt (MW) turbines which have a height of 429 feet. This would allow them to use the smallest subset of the sites evaluated in the dEIR, though the specific sites

that would be selected have not been determined. As part of the Project, the old turbine pads will be restored along with any unused access roads that were originally constructed to serve them.

The new turbine sites are primarily located on the western side of the property and will require construction of new pads for each turbine. Approximately 8.1 miles of new gravel access roads leading to the new turbines will also be built as part of the Project. Approximately 2.2 miles of the existing road system will be kept and improved. The existing substation will be upgraded and an additional 5,000 square feet will be graded and used to accommodate the new, larger substation. The existing above-ground utility lines will be replaced with an underground system requiring excavation and refilling of trenches in which the lines will be installed.

In addition to the permanent impacts described above, the Project would also create numerous temporary impacts due to construction activities. These impacts include laydown areas at each turbine site and construction of an on-site staging area. The new access roads will initially be built with extra width to accommodate construction traffic; once the construction phase of the project is complete, the roads will be regraded to their final size of 16 feet wide – down from the 32-foot width needed during construction to accommodate large trucks.

All of the existing turbines and the new turbines which will replace them are located on property owned by the EBRPD and CCWD. The portion of the site on the western-most side is owned by CCWD while most the remainder is part of EBRPD’s Vasco Caves Regional Preserve (a part of which is co-owned with CCWD). Part of the Project site is also under a conservation easement held by the Agricultural – Natural Resources Trust of Contra Costa. The easement was established as mitigation for the Vineyards development in Brentwood. While EBRPD and CCWD own the land, the wind rights are owned by Pattern Energy. This complex ownership picture, including the easement, is important to bear in mind with regard to evaluating an appropriate mitigation package for impacts from the Project, since some of these impacts are on land that was already used as mitigation or are otherwise protected.

General Comments on the dEIR

It is apparent that the Applicant has attempted to incorporate the best possible science in siting the wind turbines for the Project by relying on the work of expert Sean Smallwood. We appreciate that effort. We are also pleased to see, as the dEIR makes evident, that the Applicant sought where possible to avoid and to minimize environmental impacts, such as by reducing final size for the access roads and by removing above-ground utility lines and replacing them underground.

H-11

At the same time, however, it is important to remember that the repowering of Tres Vaqueros dramatically increases the facility’s nameplate capacity – from 29.1 megawatts (MW) to approximately 42 MW – an increase of about 38 percent. It also substantially increases the windswept or rotor swept area. (Windswept or rotor swept area is total area defined by the circle made by the turbine blades spinning around a central hub.) In light of these facts and the uncertainty surrounding the ability to achieve promised and much needed reductions in avian mortality, we strongly suggest that the County restrict the Project to the production capacity of the wind farm when it was still in operation: 29.1 MW (all turbines are currently shut down).

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Alternatively the option of phasing construction of the Project should be explored. For example, the Project could initially construct only the number of turbines that would bring energy production to the same level as the original project when it was in operation. Should monitoring data demonstrate that micro-siting is successful in achieving targets for reduction of avian mortality, then in a subsequent phase additional turbines could be constructed.

H-13

We base these suggestions for limiting the Project on several factors.

1) As Smallwood and Thelander (2004; see Appendix A¹) suggest in their report for the California Energy Commission on methods to reduce avian mortality in the APWRA, while larger turbines are fewer in number relative to MW generated, they have a greater rotor swept area. By virtue of sweeping a larger portion of the sky, each turbine individually may actually kill more birds, but the total per megawatt may be lower. However, the improvements or gains on per megawatt basis may be offset by the increased elevation or “height domain” in which the turbine blades are spinning. Smallwood and Thelander conclude, “In fact, a greater height domain may kill more birds if more birds are flying at higher altitudes, which may be true for some species” (Smallwood and Thelander 2004:A-11).

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2) Another important consideration in determining the appropriate scale of the Project is that those data on which assumptions about avian mortality are based comes from the recently repowered, nearby Buena Vista wind farm. Those data are not presented in the dEIR. Furthermore, those data have not been peer reviewed or published yet. This raises some concern about the context in which those data were collected and their comparability or applicability to the Tres Vaqueros project.

H-15

3) Smallwood and Thelander (2004) report that the shorter the monitoring period, the less reliable the data: “Any monitoring duration less than three years is likely to yield unreliable estimates of mortality.” Because the data from Buena Vista are not yet publicly available, it is difficult to reach any conclusions about the overall success of the micro-siting techniques that were used there and are proposed for use at Tres Vaqueros. This underscores the importance of using added caution when contemplating increases in production capacity on wind farms where reductions in bird-kill strikes are a goal.

The dEIR appears to acknowledge some of these uncertainties. On page 4.4-42 it states: “Despite anticipated reductions in avian mortality, in the absence of site-specific monitoring data following repowering, it cannot be ascertained whether the reductions would be below the estimated baseline fatality rates presented...in Smallwood (2010a).” Again, we appreciate that good effort and intentions are behind the siting of the turbines, but it remains true that the locations are still based on a model.

If the Project is not limited to the nameplate capacity of the original facility, then at a minimum, consideration should be given to lowering the number of turbines from the most likely scenario of 18 or 19 by reducing or eliminating the turbines in the A-string, which are of greatest concern

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¹ K. S. Smallwood and C.G. Thelander. 2004. “Developing Methods to Reduce Bird Mortality in the Altamont Pass Wind Resource Area,” PIER Final Report, prepared by BioResources Consultants K. Shawn Smallwood and Carl G. Thelander, California Energy Commission.

to EBPRD and those in the F-string, which are in an area not surveyed and that are of greatest concern to CCWD.



Mitigation

Under the California Environmental Quality Act (CEQA), the reasonably foreseeable environmental impacts of a project are supposed to be described and evaluated. In order to ensure that everyone has a clear and full understanding of the consequences of a project, the Applicant is also required to describe how significant impacts would be mitigated and to what level of significance. Providing this information is mandatory so that the public and decision-makers who control or manage public resources have sufficient information to evaluate whether or not the benefits of the project outweigh its impacts and whether mitigation sufficiently offsets such impacts.

H-17

The dEIR for this project defers much of the discussion of mitigation to a later date. While we recognize that the state, federal, and regional resource agencies ultimately decide the terms of the mitigation package, more details should be provided in the EIR so that the public and decision-makers understand what will result from the Project and can be sure that the best possible mitigation is provided to make up for impacts to resources.

For example, we are disappointed to consistently see in the dEIR an offer of a 1:1 mitigation ratio. The minimum standard ratio for most resource regulatory agencies is 3:1 (mitigation to impact). The suggestion of a 1:1 mitigation ratio throughout the dEIR is little more than a placeholder and does not provide sufficient information for the public to assess whether the amount and types of mitigation are sufficient to offset the Project's impacts.

We understand from our meeting with representatives of the Applicant that Pattern Energy is eager to provide local, on-site mitigation. Although SMD agrees that local mitigation is preferable to providing mitigation far from the Project area, in the case of the Tres Vaqueros facility, the land on which the Project will be constructed is already protected by virtue of the fact that it is owned by EBRPD and CCWD.

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Furthermore, a portion of the land also carries a conservation easement, which was created to provide mitigation for the Vineyards project in the Brentwood area. We oppose full credit for mitigation on land that is already protected; one of the basics parameters of providing mitigation for a project's impacts is to protect land or resources that would not otherwise be protected.

H-19

Mitigation for the newly repowered windfarm could still be achieved near the Project site or through the East Contra Costa County Habitat Conservancy (ECCCHCP). The ECCCHCP has already identified and prioritized areas in this part of the County with high resource values that could be used for mitigation. While wind projects are expressly excluded from seeking permits through the ECCCHCP, the Applicant could still pay into it for mitigation through the ECCCHCP.

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We would also like to highlight the importance of providing a mitigation package that covers the entire suite of impacts including not only to avian species but to terrestrial wildlife, plants, and on sensitive cultural resources that are likely found in the area. This Project is located in an

H-21



environmentally sensitive area with important habitat not only for birds and bats, but for numerous terrestrial species including California Tiger Salamander, California Red-legged frog, Alameda Whipsnake and San Joaquin kit fox among others. It also has numerous wetlands and small creeks which may be impacted by the Project.

A full package of mitigation should offered that address both permanent and short-term (construction-related) impacts to all of these resources as well as any others affected by the Project.

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H-21

Lack of Success Criteria and other enforceable standards

One of the other key requirements of mitigation as defined by CEQA is that mitigation measures must include success criteria, such as survival rates for plantings, number of acres of habitat replaced or restored, and so on. The dEIR fails almost entirely to describe any such success criteria.

If no success criteria are provided or if the criteria are subjective, then full performance of mitigation may be difficult to enforce. In contrast, the settlement agreement between the California Attorney General’s office and wind power companies operating in the Alameda Wind Power Resource Area (not including Pattern Energy) and several environmental organizations specified that a 50 percent reduction in avian mortality had to be achieved through re-powering. Failing that, additional monitoring and other measures were to be required. This provides a clear indication of the point at which remedial action and adjustment of the turbine operations would have to take place.

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To cite but one example from this dEIR, under the description of Bird Mortality (MM 4.4-1b), the dEIR notes in item vii that “if one or more turbines are causing significantly disproportionate Focal Raptor or bat fatalities, then Contra Costa County may, in consultation with the TAC, consider additional focused monitoring and/or management measures designed to reduce the fatalities attributable to those turbines, with the least impact on wind energy production.” It is not, however, specified what level of fatalities would be considered “disproportionate” and “may consider” offers no assurance that the situation would be addressed. Objective criteria should be included that definitively trigger remedial action.

The dEIR for the Project should be revised to include specific performance criteria for all mitigation, not solely for impacts related to bat and avian mortality rates. What constitutes restoration of the retired pad sites and roads? How will the success of this upland restoration be measured? The dEIR must address these questions.

Areas of Controversy

In general, SMD is in agreement with the description of the Project’s impacts as presented in the dEIR. However, we were surprised to see that under the list of “Areas of Controversy to be Resolved” on page ES-7, the Cultural Resources category was not listed. Given the presence of significant cultural resources at Vasco Caves, it is surprising the dEIR does not anticipate potential for discovery of more sites used by Native Americans within the Project area.

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The potential for impacts to artifacts or sites associated with Native Americans seems particularly high since this area was frequently used by several different tribal groups. The potential for impacts to cultural resources appears to be borne out by the discussion on page 4.5-9, where the dEIR notes that cultural artifacts were discovered on the proposed access road for the F-string turbines.

H-24

Potential impacts to cultural resources should receive greater attention in the final EIR.

Adaptive management and Monitoring

The Applicant proposes to use adaptive management as an approach to managing and mitigating the Project’s impacts. However, the dEIR does not clearly explain what kinds of adaptive management measures would be taken. Strategies for adaptive management should be explained in detail in the document. Measures that should be evaluated in such a discussion include, among others, seasonal shutdowns of specific turbines and variations in the cut-in speed for operations (this can be particularly important with regard to bat mortalities). These strategies are only briefly discussed under item 4.4-1b.

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By definition, adaptive management relies on monitoring data, which is evaluated in order to understand how resources are responding to a given activity. In this case, the monitoring for avian mortality is only planned for once a month at each turbine site. Monitoring at that level is woefully inadequate. Given the presence of scavenger species in the area, it should be immediately apparent that a once-per month monitoring program will create noticeable bias in the mortality data. We suggest that the frequency of monitoring be increased to once per week.

Despite its centrality to providing information that will demonstrate whether or not the Project meets target avian mortality reductions and to identify problematic turbines there is very little information in the dEIR on how the monitoring will be conducted. The methods and frequency of monitoring must be understood in order to evaluate whether any data and conclusions reached from it are reliable.

Additional Comments by Checklist Category

Aesthetics and Visual Quality

Save Mount Diablo strongly encourages the County and the Applicant to work with EBRPD and with CCWD to address their concerns with the aesthetic impacts of the turbines with the greatest visual impacts on open space users. In the case of the EBRPD, the EIR should evaluate the option of short-term shut down of turbines nearest areas visited during the Vasco Caves tours conducted mainly on weekends. With regard to CCWD, the dEIR should evaluate opportunities to minimize visual impacts to users of the Los Vaqueros Reservoir open space, including its visitor facilities as well as trails.

H-26

Biological Resources

In addition to our comments provided above related to avian mortality and the general approach to managing and monitoring for impacts to biological resources, we have some of additional comments. The Project proposes to keep and re-use the existing meteorological towers that monitor wind conditions and other parameters important to operating the wind turbines. Those towers are supported by guy wires. There is substantial evidence in the scientific literature that

H-27

towers with guy wire cause injury and fatality to a variety of bird species. For example, a report prepared for the US Fish and Wildlife Service in 2000, reviewing scientific literature, lists numerous studies documenting so-called ‘towerkills’ and injuries to birds from tower guy wires.²

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H-27

Impacts to birds from guy wires on meteorological towers was not addressed by the dEIR; the document should be revised to include a discussion of this impact, potential means to avoid it, and measures to mitigate it.

The dEIR describes avoiding impacts to burrowing species – burrowing owls, California Tiger Salamanders, American badger and so on – through surveys for burrows, identifying which ones are occupied and then employing a variety of means to either exclude the animals or potentially destroy burrows to prevent their re-use. Some burrows will be permanently destroyed by the new access roads or turbine pads, however others will only be impacted temporarily during construction. For burrowing owls, despite the fact that the dEIR specifies the project will follow California Department of Fish and Game protocols for this species, it is not actually clear that pre-project surveys for owls adhered to those standards (see page 4.4-46-47). Specifically, those guidelines call for surveys during both winter and breeding season along with repeat site visits to obtain the most accurate data.

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H-28

Were such surveys conducted? It is not clear this was done.

In addition, also with regard to owls, the text of the dEIR uses non-binding language to describe how some impacts will be managed. For example, on page 4.4-47, it states “the approach to owl relocation and burrow closure will vary.”

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H-29

What does this mean? The dEIR should be revised to explain how relocation and burrow closure will vary.

On the same page, it also states that during the non-breeding season, unoccupied burrows within the construction area will be excavated. This is unnecessary unless the burrows will be destroyed permanently by construction of new roads or pad sites. Burrows that need not be destroyed should be avoided wherever possible. Where they are within construction, wherever possible, they should be screened from damage and exclusion devices should be used to prevent owls from re-inhabiting them during the Project’s construction phase.

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H-30

No monitoring for the long-term success of the burrowing owl mitigation measures, including relocation, was described. The dEIR should be revised to include description of a monitoring program for owls.

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H-31

Several species of bats are known to use the APWRA. Less is known about the impact of wind turbines on bats (because, for example, they are less well studied, there are difficulties in finding the remains of such small animals and so on), however as the dEIR notes (page 4.4-49), there is

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H-32
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² Avian Mortality at Communication Towers: A Review of Recent Literature, Research, and Methodology” by Paul Kerlinger and Curry and Kerlinger, LLC prepared for the US Fish and Wildlife Service Office of Migratory Bird Management, March 2000.

evidence that bats are more prone to collisions with wind turbines that cause fatalities and injuries in low-wind conditions and during the weather conditions related to passing storm fronts.

In addition, the taller wind turbines are believed to potentially cause greater mortality to bats than shorter turbines. Since these animals may be more sensitive to impacts from the 429-foot tall wind turbines used by the Project, the dEIR should provide more specific details about the proposed monitoring program for bats. As is, the dEIR leaves unanswered many of the specifics related to monitoring for impacts to bats.

- 1) How long will the program last?
- 2) How will the acoustic monitoring program be organized? The proposed acoustic monitoring program should be explained in greater detail.
- 3) Mitigation measure 4.4-3 describes post-construction fatality surveys, but states that they ‘may be seasonal or dependent upon an initial intense survey.’ It is not clear in the dEIR what exactly will happen with this measure or how this relates to the proposed acoustic monitoring. This should be clarified in the dEIR.

Hydrology and Water Quality

Save Mount Diablo is pleased that the Project will retire and restore no longer needed turbine pads and access roads on the eastern part of the Project site. Reclaiming many of the unpaved access roads should reduce impacts to creeks and wetlands by reducing the sediment burden caused by erosion from poorly managed stormwater runoff. However, we are disappointed that the Project proposes to in-slope new unpaved access roads that will serve the new turbine sites.

By in-sloping these roads and directing sheetflow into ditches and eventually into culverts. The culverts would discharge concentrated flows of stormwater, now at a higher rate of speed and with more force, potentially increasing erosion. In order to protect the steep hillsides where the roads and culverts are located, the stormwater outfalls would be surrounded by rock riprap. However, such riprap often fails to adequately prevent erosion and it looks out of place on the otherwise grassy slopes found at the site.

The dEIR should consider the option of out-sloping the access roads, allowing sheetflow to pass across the roads and disperse naturally. This reduces ditch and culvert maintenance and prevents increases to the amount, speed and sediment load of runoff reaching creeks and wetlands.

The newly constructed and enlarged Operations and Maintenance facility may also result in an increase to impervious surfaces, which would increase runoff and the amount of sediment and other pollutants carried from the site into the nearby small creek. The dEIR should make clear the amount of impervious surface before and after this facility is constructed. The dEIR does not fully evaluate the impacts from increases in impervious surface.

This is particularly important since it appears that existing facility contributed significantly to erosion problems in the drainage downstream from that facility as noted in comments by EBRPD. As we understand it, there is a population of California tiger salamander in a stockpond



H-32

H-33

H-34

in that area, which could be impacted by this problem. The dEIR should identify and describe methods to protect the pond by managing stormwater runoff and stabilizing the creek, which could be achieved through a restoration project.

Save Mount Diablo supports development of wind energy and appreciates that the Tres Vaqueros project demonstrates a good-faith effort to avoid, minimize, and mitigate for its impacts. We are pleased to see that the Project will restore some 11 acres of upland habitat and that measures were taken to limit the footprint of the Project where possible.

However, the Project still has permanent impacts that cannot be fully mitigated. Thus, as we have outlined above, in the interest of putting together the best possible project that mitigates to the maximum extent possible for impacts to sensitive resources be they cultural, biological, or hydrological, we hope the dEIR will be revised to address our concerns and will provide more details about mitigation ratios, triggers for adaptive management strategies and specific, enforceable criteria for evaluating the long-term success or failure of mitigation measures. The public and decision makers must be fully informed

Thank you for the opportunity to provide comments on the Project.

Sincerely,

Jodi L. Bailey, Ph.D.
Land Conservation Manager

cc: EBRPD
CCWD



H-35

H-36

2.3.8 Letter H – Responses to Comments from Save Mount Diablo

H-1 The commenter requests clarification on what rights EBRPD and CCWD have with regard to repowering. Table 3-1 of the DEIR identifies the owner of each parcel and the owner of the wind rights on each parcel. DEIR Figures 3-2a and 3-2b show the property ownership and the wind rights ownership within the Project Area, respectively. The County has updated DEIR Figure 3-2b (see Revised Figure 3-2b, below) to show the revised approximate area of Tres Vaqueros wind rights, as well as utility easements within the Project Area. The principle difference is that the revised figure no longer shows the Tres Vaqueros wind rights extending over Los Vaqueros Reservoir or its dam. Note that Tres Vaqueros wind rights are not severed by the utility easements and that the Project would not construct wind turbines within those easements.

The question of the legal rights as between the property and wind rights owners is a question of property law that is beyond the scope of CEQA. Nonetheless, the County understands that under various easements, leases and orders creating and/or recognizing these various property interests, the wind rights owners possess the exclusive and perpetual right to construct, maintain, and operate wind energy facilities on these lands.

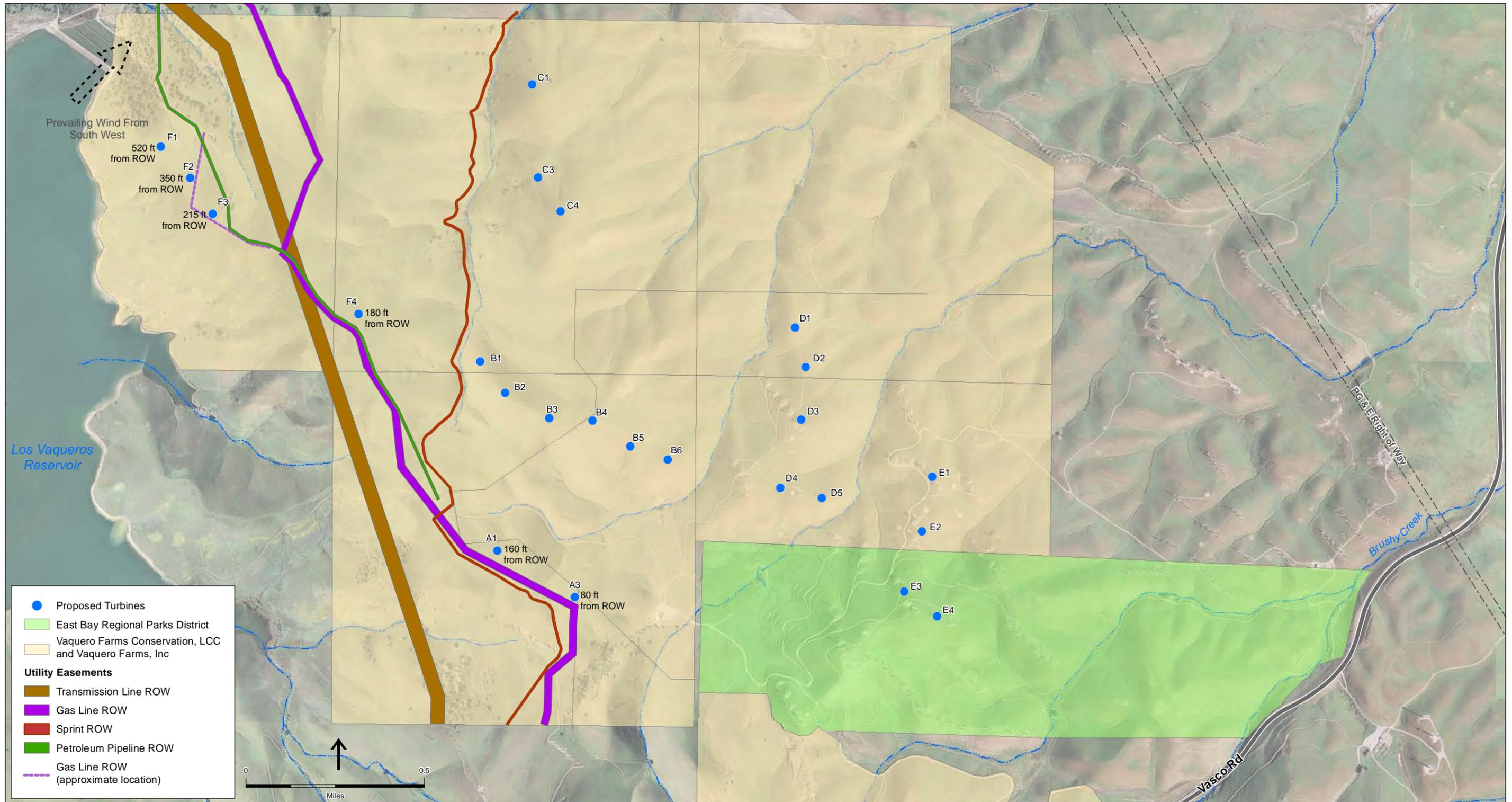
In the case of the 936 acres under a conservation easement on a portion of EBRPD land, the easement recognizes the right of the wind rights holder to construct new wind facilities (e.g., repower) “provided that the overall square footage of the repowered project is not increased over above the square footage of the existing leases.” On the remainder of the EBRPD land not under the conservation easement, the wind rights owners have the ability to repower under existing leases. Regarding the CCWD land, in the Amended Final Order of Condemnation on the CCWD land, the court reserved to Vaquero² “all rights for wind energy power conversion and the transmission of power generated from wind.”

To summarize, EBRPD is a contractual party to wind development leases, which leases include the right to repowering of wind facilities. Those same repowering rights are recognized under the conservation easement. CCWD has agreed to reserve wind rights, both for new and repowered turbines, to Vaquero as part of the proceedings when CCWD condemned Vaquero’s property.

H-2 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.3. The Conservation Easement is provided in FEIR Appendix A.

H-3 See Responses B-1 through B-42, which address all comments and concerns posed by the EBRPD. Of note, the commenter states that they support EBRPD concerns with the Project as they pertain to “weekend shutdowns of turbines nearest the areas where they

² “Vaquero” includes Vaquero Farms Conservation, LLC and Vaquero Farms, Inc, which are separate from the Project Applicant, Tres Vaqueros Windfarm, LLC



SOURCE: PERMCO, 2010; County of Contra Costa, 2009

Notes: 1. Locations are approximate.
 2. While 24 turbine site locations are shown, only 21 turbines will be installed

Tres Vaqueros Windfarm Repowering Project . 209132.02
Figure 3-2b (REVISED)
 Ownership of Wind Rights with the Repowered Project

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- conduct tours of Vasco Caves.” To clarify, in their letter (Letter B), EBRPD did not request weekend shutdown of turbines in proximity to Vasco Caves tours; EBRPD did request prohibition of construction in certain visually prominent areas during tours and prohibition of construction vehicle use of Howden Road on weekends. Regarding weekend construction in the Project area, the commenter is referred to Response B-13.
- H-4 See Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2, and Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*.
- H-5 With respect to the commenter’s remarks on Project phasing, see Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*. The changes included in this new alternative proposed by the Applicant reduce the overall number of turbines from 21 to 19, would tend to reduce impacts, and does all of this while allowing the Applicant to meet Project electrical generation goals. Phasing of implementation of this Project as proposed by the commenter would prolong construction impacts similar to or potentially worse than those considered in Alternative 4 (see DEIR Section 6.5.5). Many other aspects of this phasing are considered in Alternative 2 (see DEIR Section 6.5.3), where impacts were found to be mostly similar to the Project (note that the biological impacts to avian mortality would not be significantly lessened) except for GHG and energy where impacts would be greater than the Project due to reduced clean energy available to the grid. Phasing of this Project also may not be economically feasible, mostly due to the unknown extended duration of construction, unknowns about the overall costs, and unknown measures potentially needed to achieve the commenter’s definition of “satisfactory” reductions in avian mortality.
- The design of this Project has undergone at least three rounds of micrositing by one of the recognized experts in the field – Shawn Smallwood. Use of Dr. Smallwood’s local knowledge and the multi-year mortality data from Buena Vista Windfarm (across Vasco Road from the Project and in very similar terrain and conditions) is scientifically defensible. Whether the micrositing has been verified or not, it represents state of the art predictive impact wind turbine siting.
- H-6 In order to obtain necessary permits from CDFG and USFWS, the Project Applicant must provide adequate mitigation for impacts to biological resources. The County agrees with the commenter that the Applicant should not receive full credit for protection of lands that are already protected. However, CDFG and USFWS will make the final determinations regarding credit for mitigation lands and acceptable locations for implementing mitigation.
- H-7 The County agrees that payment to the East Contra Costa County Habitat Conservancy could be acceptable mitigation for certain impacts to biological resources. The Applicant has contacted the Conservancy to explore options for fulfilling mitigation requirements through such payment.
- H-8 DEIR Mitigation Measures 4.4-1 through 4.4-14 provide a suite of mitigation measures that address impacts to all of the sensitive biological resources that may be impacted by

- the Project. Some of these mitigations have been modified in response to comments received on the DEIR; see Chapter 3 for all text changes that have been made to these mitigation measures in the FEIR.
- H-9 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.7.
- H-10 Because the comment identifies no specific mitigation measure as inadequate for the reason stated, the County is able to provide only a general response. An EIR must discuss mitigation measures that can minimize a project's significant environmental impacts and mitigation measures must be clearly defined, feasible, and enforceable. Where the implementation of performance standards would effectively address an environmental impact, a mitigation measure may offer a "menu" of mitigation choices rather than impose a specific mitigation method. In the DEIR for the Project, mitigation measures relating to biological resources, cultural resources, hydrology and water quality, and other resources were developed in consultation and coordination with resource agencies with primary expertise over the resources of concern, consistent with Project-specific agency input and published agency guidance documents, and are based on the professional judgment of resource experts about current best practices. See, for example, Mitigation Measure 4.4-1b (DEIR, p. 4.4-43), which was developed in coordination with many agencies such as USFWS, CDFG, and others; Mitigation Measures 4.3-2a and 4.3-2b (DEIR, p. 4.3-14), which is based on the BAAQMD's published guidance; and Mitigation Measure 4.4-1a (DEIR, p. 4.4-43), which is based on the experience and expertise of local APWRA researchers such as Shawn Smallwood. For these reasons, the County has determined that the mitigation measures recommended in the DEIR, as modified in the FEIR, would be effective in addressing identified Project impacts.
- H-11 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.
- H-12 Refer to Response H-5.
- H-13 Refer to Response H-5.
- H-14 Since the 2004 report to the California Energy Commission on methods to reduce avian mortality in the APWRA, numerous studies have explored and sometimes advanced the science surrounding avian collisions with wind turbines. A representative portion of these studies are summarized in DEIR *Appendix D3, Literature Review of Avian and Bat Collision Impacts Information*. Whether turbines with a greater blade swept area result in greater avian fatality is contested (Orloff and Flannery, 1992; Hunt, 2002; Smallwood and Thelander, 2004; and others), and whether reduced avian fatality on a per-MW basis is offset by increased fatality due to taller turbines is speculative at this point in time. It may also be species-dependent (i.e., taller towers may reduce fatalities of the four focal raptors but increase fatalities for bats and migrating songbirds). More recently, independent science advisors for the APWRA Conservation Plan (Conservation Biology Institute, 2009) have stated that wind energy facilities should not be limited to their existing (pre-repowering)

- capacity because repowering and micrositing are likely to reduce avian fatalities more than any other mitigation measures they evaluated while accommodating a substantial increase in energy production for the State of California.
- H-15 The commentator is largely incorrect about fatality monitoring data for the Buena Vista repowering project. Page 4.4-40 of the DEIR discusses fatality monitoring data for the Buena Vista (Insignia Environmental, 2009) and Diablo Winds (WEST, 2006; ICF Jones & Stokes, 2009; Smallwood and Karas, 2009) repowering projects. Full citations are provided in the DEIR's *References* section, and reports are publicly available on the APWRA Scientific Review Committee's website. While specific avian fatality numbers are not included in the DEIR, the general preliminary findings are summarized on page 4.4-40. Findings are cautiously labeled as "preliminary" due to the short monitoring period. In addition, the reports for the Buena Vista project are reviewed by the Contra Costa County Technical Advisory Committee, which is comprised of staff from the County, USFWS, CDFG, and EBRPD.
- H-16 See Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*, under which turbines A1 and A3 would be eliminated. The County notes the commenter's preference for the elimination of the F-string. Regarding concerns about the F-string being an area not surveyed, see Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- H-17 The County disagrees with the assertion that the DEIR defers much of the discussion of mitigation (presumably biological) to a later date. See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.7.
- H-18 See Response H-6.
- H-19 See Response H-6.
- H-20 See Response H-7.
- H-21 This comment does not state a specific concern or question regarding a significant environmental impact or the adequacy of the Draft EIR. Impacts and mitigation measures pertaining to avian species, terrestrial wildlife and plants are addressed in DEIR Section 4.4, *Biological Resources*. Impacts and mitigation measures pertaining to cultural resources are addressed in Section 4.5, *Cultural Resources*.
- H-22 The settlement agreement among the California Attorney General's Office, Alameda County and several environmental organizations is not applicable to this DEIR. Therefore, a 50 percent reduction in focal raptor mortality was not specified as the threshold for adaptive management. The threshold here is based on one or more turbines causing significantly disproportionate fatalities, and the threshold is also triggered by any fatality increases over baseline, as described in DEIR Section 4.4.3, *Project Baseline*. The use of "significantly disproportionate" is explained in Section 2.2.3, *Master Response on*

Biological Resources, subsection 2.2.3.4. This ensures that adaptive management would apply if fatalities caused by the Project were greater than baseline fatalities, and that adaptive management would also apply if overall fatalities were equal to or less than baseline but one or more turbines was the main cause of those fatalities. General Biological Resources Mitigation Measure 2 requires the Applicant to submit for review and approval by the County Zoning Administrator, prior to issuance of a grading permit or building permit, a plan for reclaimed areas and temporarily-impacted areas describing pre-Project conditions, restoration, a timetable for implementation, and monitoring-success criteria.

H-23 See Response B-4.

H-24 The commenter notes that potential for impacts to artifacts or sites associated with Native Americans seems particularly high since this area was frequently used by several different tribal groups. The commenter also notes that cultural artifacts were discovered on the proposed access road for the F-string turbines. The feature located in vicinity of the F-string turbines (temporarily designated ESA-TV-01) is a human-made rock pile. No other cultural materials were located in the vicinity and there are no cultural indicators on the rocks themselves (heat or fire affects). The feature has been recommended not eligible for listing in the California Register of Historical Resources.

As described in the DEIR, the Project area has been intensively surveyed by archaeologists. The Los Vaqueros region in general has been the subject of numerous cultural resource studies, surveys, and excavations over the past several decades, primarily due to the construction of Los Vaqueros Reservoir. Existing cultural resources have been documented and mapped in the vicinity of the Project. Mitigation measures, including protective measures, have been recommended to reduce impacts to known cultural resources to a less-than-significant level. The County has determined that the DEIR's discussion of cultural resources, and the proposed mitigations, are sufficient. See DEIR Section 4.5, *Cultural Resources*.

H-25 Adaptive management strategies are discussed in Mitigation Measure 4.4-1b including: strategic non-operation (curtailment); implementing the best available science as it becomes available over the life of the Project; and, in the absence of known effective methods, performing additional studies to develop specific proven methods. Blade paint schemes, perch elimination, rodent control, and other measures are not suggested because their mitigation value is contested or they have not been correlated to a reduction in collision fatalities. Moreover, some potential measures identified in the literature are not feasible to implement under adaptive management and must instead be incorporated into initial project design (i.e., blade paint schemes, and tower design). Thus, adaptive management relies on the identified strategies of strategic non-operation, implementing the best available science as it becomes available over the life of the Project, and performing additional focused monitoring and/or management measures for the purpose of identifying effective strategies.

Adaptive management is also discussed in Section 2.2.3, Master Response on Biological Resources, subsections 2.2.3.4 and 2.2.3.5.

- H-26 Regarding short-term shutdown of turbines near Vasco Caves tours on weekends, see Responses H-3 and B-13. Regarding CCWD concerns about impacts to visual resources, see Responses A-2, A-3 and A-6.
- H-27 While impacts to avian mortality from bird strikes on guy wires are not disputed, for the Project the Applicant proposes to use the met towers that already exist in the Project area. Thus, there is no change from the CEQA baseline to evaluate, and no ability for the County to impose mitigation. However, through the Land Use Permit process the County has the ability to require that any new meteorological towers constructed in the future be freestanding and not utilize guy wires.
- H-28 Comments noted. See Section 2.2.3, *Master Response on Biological Resources*, subsections 2.2.3.6 and 2.2.3.7.
- H-29 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.6.
- H-30 The County agrees with the commenter. See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.6.
- H-31 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.6.
- H-32 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.5 for a discussion of acoustic and fatality monitoring for bats, and revised mitigation.
- H-33 See Section 2.2.4, *Master Response on Hydrology*, subsection 2.2.4.2.
- H-34 See Response B-7 and Section 2.2.4, *Master Response on Hydrology*, subsections 2.2.4.2 and 2.2.4.3. Regarding impacts from the existing windfarm, see Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.2. Regarding impacts to the ANRT conservation easement resources, see Response G-7.
- H-35 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.
- H-36 The commenter is correct that the Project, as mitigated in the DEIR and with the proposed modifications to those mitigation measures in this FEIR, would still have permanent impacts. The County has made a number of modifications to mitigation measure as detailed in Section 2.2, *Master Responses*, that respond to commenters' requests for strengthening mitigations for biological and hydrological issues. The FEIR also presents a new environmentally preferred alternative in Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*, one feature of which eliminates the A-string turbines and directly reduces visual impacts and impacts to cultural resources.

For specific responses addressing adaptive management see Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.7 and Response H-25.

July 19, 2011

Via U.S. Mail and Email

Mr. William Nelson
Contra Costa County
Dept. of Conservation & Development
651 Pine Street, 4th Floor – North Wing
Martinez, CA 94553

Re: Tres Vaqueros Windfarm Project Draft Environmental Impact Report
State Clearinghouse No. 2009032077; County File No. LP09-2005

Dear Mr. Nelson:

Golden Gate Audubon Society, Santa Clara Valley Audubon Society, Ohlone Audubon Society, and Mt. Diablo Audubon Society (collectively “Audubon”) provide these comments regarding the Tres Vaqueros Windfarm Project Draft Environmental Impact Report (the “DEIR”) in the hope of improving the draft and, more importantly, reducing biological impacts to birds, bats and other species who suffer impacts from turbine operations in the Altamont Pass Wind Resource Area (APWRA). Audubon’s members and supporters use and enjoy the APWRA and watch, study, photograph and appreciate the birds and other wildlife that depend on the APWRA and that are or may be affected by wind turbine operations at the Tres Vaqueros windfarm (“the Project site”) and its environs. We appreciate this opportunity to comment on the DEIR.



I-1

As an initial matter, Audubon supports the decommissioning of old-generation turbines and, where appropriate, replacing them with new, larger turbines (i.e., “repowering”), providing this process includes adequate pre-project biological surveys, siting in areas that are the least dangerous to birds and bats, mitigation measures, and a coherent, comprehensive monitoring program and adaptive conservation strategy. While birds would benefit most from the No Project alternative, Audubon supports wind resource development provided that it is (1) properly sited, (2) is fully mitigated, (3) is rigorously and scientifically monitored, and (4) includes a binding adaptive management plan to reduce impacts as they are identified and adequate off-site mitigation strategies to reduce unavoidable impacts to birds and bats.

Audubon also reminds Contra Costa County that the legality of permitting the Tres Vaqueros project is questionable. The DEIR acknowledges that birds protected by Fish & Game Code Sections 3511, prohibiting take of all “fully-protected” birds (including golden eagles),¹ or the federal Migratory Bird Treat Act, 16 U.S.C. §§ 703-712, or the



I-2

¹ The DEIR fails to reference several other important Fish and Game Code sections, as follows: (1) section 3513, prohibiting take of all “migratory non-game” birds protected by the federal Migratory Bird Treaty

Bald and Gold Eagle Protection Act, 16 U.S.C. §§ 668-668c, will continue to be killed by the Project. Each of these “takings” constitutes a violation of state and/or federal law. The California Department of Fish & Game and the U.S. Fish & Wildlife Service have never enforced these laws and have thereby let tens of thousands of birds be killed without any regulation or mitigation whatsoever, creating a permissive regulatory environment that has reduced expectations for mitigation and conservation of affected species. We encourage the responsible agency to review these laws and reconsider its responsibility to ensure adequate mitigation measures and protections of species suffering ongoing and long-term cumulative impacts due wind farm operations in the APWRA.

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I-2

Therefore, Audubon strongly recommends that the County, Project Sponsor, and regulatory agencies again review the DEIR, specifically its impacts on biological resources, to ensure that mitigations are truly adequate. This analysis would be improved by (1) considering that the “baseline” for the project should not be only “existing conditions” at the time of the Notice of Preparation but should also conditions once the current permits expire and the current turbines are required to be removed (see below) and (2) that even impacts that are identified as “significant and unavoidable” be mitigated to the extent practicable by funding conservation easements and other measures on adjacent lands to provide adequate foraging and breeding habitat for affected species, to offset those ongoing losses of birds and bats that will be caused by the Project.

I-3
I-4

Audubon provides comments on specific portions of the DEIR below. Where practical, Audubon has attempted to follow the structure of the DEIR:

I. PROJECT BASELINE

There are two fundamental problems with the baseline described in the DEIR. The DEIR “averages” conditions over time to account for both the current circumstances (91 non-operating turbines) and prior conditions (with all or most of the turbines operating and resulting in injury and death to birds), thereby inflating mortality rates as compared to mortality projections for the Project. The DEIR also erroneously assumes “existing conditions” will continue beyond 2013, when the current permits expire and beyond which the Project Sponsor has no right to expect that current operations could continue. These two errors fundamentally skew the entire analysis of the Project’s direct, indirect and cumulative impacts and significantly undermine the potentially adequacy of the DEIR.

I-5

First, Audubon takes issue with the decision of the Project sponsor to “average actual levels” to reflect pre-project conditions. (See DEIR, at 4-3) The DEIR is unspecific as to

I-6
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Act (including eagles, hawks, falcons, and owls); (2) section 3503.5, prohibiting take of all birds-of-prey (i.e., eagles, hawks, falcons and owls); (3) section 3800(a), prohibiting take of all “non-game” birds (including eagles, hawks, falcons, and owls); and); and (4) section 2000, prohibiting any take of all birds not otherwise allowed by the Fish and Game Code or regulations. Nothing in the Fish and Game Code or regulations authorizes take any of the eagles, hawks, falcons, owls and other birds killed by the wind turbines at Altamont Pass. “Take” is defined by section 86 of the Fish and Game Code to include killing.

what the “actual levels” are that it is averaging. More importantly, the effort to “average” these “levels” appears to be an effort to include impact rates that occurred during operation of the old-generation turbines in order to make the impacts of the new, repowered turbines appear less significant. This amounts to essentially creating a “credit” for killing more birds in the past to make the proposed Project appear more beneficial. More importantly, it ignores the fact that in 2009, all 91 turbines were non-operational, which is the correct “existing condition” that should form the baseline for the DEIR (at least through 2013). Moreover, all 91 turbines have not been operating for several years prior to 2009.



Second, even if all 91 turbines were currently operating, there is no basis for the DEIR to assume that “existing condition” of 91 operating turbines would continue beyond 2013, when the current permits will expire. Neither the Project Sponsor nor the County should assume that after 2013 continuation of current operations (i.e., the 91 old-generation turbines) would continue. First, these old turbines are likely not capable of operating beyond that time. Second, Audubon would actively oppose such a proposal and points out that continued operation of the old-generation turbines would continue to kill birds in violation of state and federal laws and the Public Trust Doctrine. Simply put, after the expiration of the current permit 2013, there will either be repowered turbines in the Project, or no turbines at all. Therefore, the DEIR should be amended to reflect that after 2013, the “baseline” for the Project Site will be one free of all turbines.

I-7



II. BIOLOGICAL RESOURCES

A. AWPRA NCCP/HCP

Audubon understands that the AWPRA Natural Communities Conservation Plan/Habitat Conservation Plan process has been suspended and/or is unlikely to proceed. At this point, it appears that the parties involved in the NCCP/HCP process are electing to develop a conservation strategy in partnership with Alameda County. Contra Costa County has not participated in the process to date. Therefore, it is unclear how the new “conservation strategy” will apply to Tres Vaqueros. In any event, elements of the APWRA conservation strategy developed through that process should not be considered as mitigations for impacts from the Project because they are not yet decided.

I-8



B Contra Costa Water District Lands

It is our understanding that the U.S. Fish & Wildlife Service (USFWS) has determined that the Biological Opinions (BO) issued for the expansion of the Contra Costa Water District (CCWD) lands did not anticipate the installation and operation of new-generation turbines. (See DEIR, at 4-4.3) It is our understanding that USFWS’ position on this matter may present a controversy that could delay or prevent repowering. Audubon is also concerned that the impacts to terrestrial species that will result from the repowering process and future operations be adequately mitigated for all terrestrial species, especially the listed species covered by the BOs. Audubon strongly recommends that the Project Sponsor confer with USFWS and address any concerns for listed species that occur at the site. Audubon believes that the final EIR must specifically address whether the USFWS

I-9



believes that the existing BOs apply to the Project and discuss, as appropriate, additional mitigations necessary to comply with the BOs. If the USFWS does not believe that the existing BOs apply to the Project, then the DEIR should state that a new BO will be required for the Project to proceed.



C. East Bay Regional Park District Lands

Audubon is concerned about aesthetic and other impacts on East Bay Regional Park District (EBRPD) lands. The EBRPD is responsible for stewardship of significant areas of land around the Project site and for providing access for visitors, where appropriate. Access to open, unspoiled natural areas is vital for human and community health. Moreover, biological impacts from adjacent areas may decrease the value of EBRPD for wildlife and people who appreciate wildlife. For the purposes of this DEIR, we defer to, join in and endorse any comments provided by the EBRPD regarding impacts to its lands, viewsheds, and other interests.



I-10

D. State Wildlife Laws and Regulations

Audubon recommends that the paragraph stating with “Full Protected Species” on page 4.4-9 of the DEIR be amended to include the following words (underlined):

Collectively, Fish and Game Code sections 3511, 4700, 5050 and 5515 identify 37 full protected species, including the golden eagle.



Audubon believes that it is relevant to decision-makers and the public reviewing the document that golden eagles are a “full protected species” and that the take (i.e., killing) of golden eagles at Tres Vaqueros is a violation of state law for which there is no take is allowed.

I-11

The DEIR should also note that an incidental take permit or other authorization to take state listed species that are not “fully protected species” will be required under the California Endangered Species Act.

E. Discussion of No Biological Resources Impacts

1. Decommissioning is likely to have impacts on terrestrial species and to create a conflict with existing Biological Opinions.

Audubon is not persuaded by the DEIR’s conclusion that “[b]ecause decommissioning would improve habitat conditions overall relative to existing conditions” that the DEIR need not further evaluate their impacts. First, Audubon is concerned with that the DEIR fails to adequately consider terrestrial impacts to listed species, especially those on CCWD lands subject to existing Biological Opinions which the USFWS has stated do not cover repowering or operation of wind turbines. The DEIR’s somewhat cavalier disregard for impacts stemming from decommissioning may create unnecessary conflicts with wildlife agencies.



I-12

2. The DEIR cannot assume that the site will be decommissioned and restored at the end of the proposed Project’s term.

Second, Audubon takes issue with the assumption that “[a]t the conclusion of the Project’s useful life (assumed to be greater than or equal to 30 years), decommissioning would involve dismantling Project components and restoring the site to pre-wind energy facility topographical and other conditions.” (DEIR, at 4.4-30). Unless the Project Sponsor is committing—irrevocably—to removing all turbines at the end of the Project and not repowering, updating, replacing its turbines, seeking permit extensions or new permits, or consigning its rights to do so, there is no guarantee that the wind turbine operations may well continue at the site in perpetuity (at least well beyond the approximately Project life of 30 years). In other words, there is no guarantee that the site will ever be restored to pre-wind facility conditions. Therefore, no “credit” for decommissioning should be factored into the assessment of impacts to biological resources.

I-13

Use of this improper baseline leads to an unsupported conclusion regarding the Project’s impacts as compared to current conditions. In reality, the Project will have significant new and additional direct, indirect and cumulative impacts on many wildlife species in the APWRA, particular birds and bats. The DEIR must forthrightly acknowledge these impacts without watering down the analysis with a false baseline.

3. The DEIR’s characterization of “Existing Conditions” is incomplete and skews the analysis in favor of the proposed Project.

Audubon again takes issue with the notion that “existing conditions” provide the only baseline for consideration of impacts from the project. (See DEIR, § 4.4.5, at 4.4-30) The “baseline” should include consideration of actual turbine conditions (i.e., 91 non-operating turbines) or, alternatively, of operation of existing turbines only through the end of the term of the current permit(s) and then be based on a “no-turbine” analysis from that point forward. Because the Project Sponsor has no right to assume that it will continue to have rights to operate turbines beyond the current permit terms and because it is required by its permit to decommission and restore at the end of its permit term, there is absolutely no basis for comparing the impacts through the life of the proposed Project to those of “existing conditions” with the currently-installed 91 turbines.

I-14

The DEIR’s reliance on “existing conditions” as a “credit” of sorts is highlighted in its discussion of impacts to biological resources, specifically to birds. (DEIR, at 4.4-38, 4.4-46) For example, the DEIR assumes that “[a]s the Project would reduce the number of turbines present on ridgelines, any existing impact on ridgeline-associated species would likely be reduced.” (DEIR, at 4.4038) This “likely” reduction would only occur in comparison to current operations insofar as the current operations continue (and again we note, as does the DEIR, that all turbine operations have already been ceased in the Project

area). Beyond that point, the new turbines represent a *greater* threat than what would occur with a baseline that assume no turbines would exist on the Project site.

↑ I-14

The DEIR makes this assumption again in its discussion of impacts to burrowing owls. (DEIR, at 4.4-46) The DEIR states that

because temporarily disturbed areas would be reclaimed prior to initiating subsequent construction . . . and because more foraging habitat would be created than destroyed, the Project would have a less-than-significant impact in terms of foraging habitat destruction or degradation.

I-15

(*Id.*) The DEIR continues by concluding that “the Project would restore more acres of potential habitat than it would permanently disturb.” (*Id.*) These conclusions are based on the erroneous assumption that the “existing conditions” serve as a baseline for the life of the project. Rather, this analysis should be conducted considering that the existing conditions of current operations will continue only at the very least until the current permits expire. After that, the baseline should be that of no turbines and a fully reclaimed site.

In short, the Project sponsor should not receive a “credit” for running turbines for decades that have killed thousands of birds without ever conducting any meaningful mitigation or offset measures. The DEIR’s analysis must include a “baseline” in which the Project site does not have any turbines after the expiration date of the current permit.

F. Audubon Endorses “Micrositing” but Requests Additional Information Be Included in the DEIR.

I-16

Audubon approves of the method described in the DEIR wherein the turbines are “micro-sited” to avoid locations that pose the greatest risks to birds. (*See* DEIR, at 4.40 – 4.42) However, Audubon is concerned that the DEIR is not adequately specific about to what extent the micro-siting studies were relied on in developing the Project. At a minimum, the DEIR should describe the relative risk of each of the 21 turbines and should include maps that indicate areas of high risk or bird density and where turbines are proposed to be sited relative to those locations.

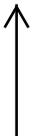
III. SPECIFIC MITIGATION MEASURES

A. Mitigation Measure 4.4-1(b) (Post-construction Monitoring)

I-17

Mitigation Measure 4.4-1(b) includes many terms that resemble those in the 2010 settlement between NextEra. Inc./ESI, Inc. and the California Attorney General’s Office, Californians for Renewable Energy (CARE), and five local Audubon chapters, the DEIR’s drafters appear to have cherry-picked to excise some important provisions that were included in the agreement. Moreover, Audubon reminds the Project sponsor that the

monitoring provisions set forth in the agreement were not subject to CEQA standards and were agreed to with the knowledge that additional monitoring requirements may be required through the subsequent CEQA process or review by CDFG or USFWS.



1. Misinterpretation of the NextEra/Audubon/CARE/AG Agreement.

Measure 4.4-1(b)(v) misconstrues the Next Era/Audubon/CARE/AG Agreement to only require bird and bat use and behavior studies at a subset (30%) of the turbines twice per month. In fact, as a key negotiator of and signatory to the agreement, Audubon can represent that the agreement was intended to require bird and bat use and behavior studies at all turbines at least once per month as well, in addition to fatality monitoring at all turbines at least once per month and a subset of turbines at least twice per month. Furthermore, under the agreement, these are intended to be the *minimum* monitoring requirements. The agreement was designed to allow the TAC, SRC, USFWS or CDFG to impose more rigorous monitoring requirements if the minimum requirements were deemed inadequate. At a minimum, Mitigation Measure 4.4-1(b)(v) should be modified to accurately reflect the requirements of the Next Era/Audubon/CARE/AG Agreement. It is our belief, however, that the DEIR should be further modified as recommended below to adequately monitor and mitigate for impacts to birds and bats.

I-18

2. Monitoring should include pre-construction, post-construction but pre-operational, and operational periods for the Project.

Measure 4.4-1(b)(i) states that monitoring shall commence within 3 months of activation of the repowered turbines. (DEIR, at 4.4-44) To best understand mortality arising from the project, the monitoring program should include (1) pre-construction monitoring, (2) post-construction but pre-operation monitoring (i.e., after the turbines are erected, but before they are turned on), and (3) monitoring during active operation (including seasonal shutdowns) of the repowered turbines. The data gathered by post-construction/pre-operation surveys could be extremely helpful in understanding turbine-based mortality in the Project site and in the APWRA more broadly.

I-19

Measure 4.4-1(b)(ii) provides for only 5 years of monitoring (3 years immediately after construction and an additional 2 years on the 10th anniversary of the commencement of operations). (DEIR, at 4.4-44) This monitoring period reflects language from the 2010 NextEra/Audubon/CARE/AG agreement. However, upon further consultation with qualified biologists, Audubon believes that a minimum of 6 years is a more appropriate monitoring window (3 years immediately after commencement, 3 years after commencement of operations). This will allow for improved analysis of the data, especially to smooth out the wide variation in mortality numbers that can occur from year-to-year. Audubon reminds the DEIR drafters that the language in the 2010 agreement was not subject to CEQA or review by the SRC, CDFG, or USFWS and was the product of negotiations, not scientific review. At a minimum the DEIR should



explain whether the 3/2-year monitoring period will provide adequate data for a robust and useful analysis.



3. Access by qualified third-parties to the Project Site.

The Project Sponsor should agree to permit qualified third-parties access to the Project Site to conduct additional monitoring or studies beyond the 3-years provided for in MM 4.4-1(b). Other funding sources may be made available and APWRA-wide analyses may benefit from access to the site. If the County and the Project Sponsor are serious in their commitment to contribute to efforts to reducing avian mortality in the APWRA, they should guarantee access for qualified researchers (who are properly vetted by the Contra Costa County TAC or other suitable body).

I-20

4. Monitoring should be conducted in consultation with the TAC.

Audubon strongly recommends that all monitoring protocols be developed and implemented in consultation with the Contra Costa Technical Advisory Committee (TAC) or other appropriate scientific advisory body. MM 4.4-1(b)(v) expressly states as much in relation to the initial 3-year monitoring program. However, it does not indicate that the TAC will be consulted for the follow-up 2-year study. (DEIR at 4.4-44) Audubon recommends that MM 4.4-1(b) be revised to include the following language:

The Applicant shall monitor a subset (30 percent) of the repowered turbines at least twice per month for the duration of the post-construction monitoring period for fatalities and bird utilization and behavior, in consultation with the TAC or the SRC.

I-21

Moreover, after further discussions with qualified biologists, Audubon believes that all turbines should be monitored twice per month throughout both survey periods. Data indicate that scavenging of avian and bat carcasses occurs and confounds mortality analysis. Increase in survey range and frequency will help reduce error and uncertainty introduced by scavenging. At a minimum, the DEIR should explain why the alternative to monitor only 30% is scientifically defensible.

I-22

5. Monitoring reports should include impacts to bats.

Mitigation Measure 4.4-1(b)(vi) states that monitoring reports will include information about fatalities of the four focal species (American kestrel, burrowing owl, golden eagle, and red-tailed hawk) and other bird species. Section (vi) is silent as to impacts to bat species. Audubon recommends that MM 4.4-1(b)(vi) be amended to include the following language (excised text in strikethrough, added text underlined):

I-23

All monitoring reports shall report adjusted and unadjusted annual fatalities for the Focal Raptor Species, ~~and all other bird species,~~ and bats on a per turbine and per-megawatt basis. Monitoring



reports also shall summarize the results of the bird behavior and use studies for the preceding 1 to 3 years, as applicable.

6. Monitoring data should be freely available to qualified third-parties.

In order to ensure transparency in the monitoring process and to contribute to research and knowledge about the APWRA, data gathered as part of the monitoring effort described in MM 4.4-1(b) should be treated as public record and made available to the public upon request. Audubon recommends that copies of the raw data (forms or electronic files, if electronic data loggers are used) be kept on file with the Contra Costa County planning department. Alternately, the Project Sponsor should agree to make the raw data available to qualified researchers for use, analysis and publication (with appropriate credit to the Project Sponsor and researchers). By making the data available, the Project Sponsor will contribute to the knowledge base about avian mortality, micrositeing, and other factors that may be used to improve conditions for birds, bats and other wildlife that suffer impacts due to wind turbine operations in the APWRA. As such, data sharing may be considered a “mitigation measure” that may further reduce the significant and unavoidable impacts that will occur due to the Project.



I-24

B. Mitigation Measure 4.4-2

Audubon is concerned about the adequacy of Mitigation Measure 4.4-2 in part because it assumes a baseline of “existing conditions” that includes current operations in perpetuity (see Section I above) and because it assumes that “reclaimed” areas will immediately become available for foraging and nesting for birds (specifically burrowing owls). (See DEIR, at 4.4-46) At a minimum, the DEIR must make an express finding about how soon reclaimed land will be useable for burrowing owls. Lands taken out of production for foraging and breeding should be mitigated through a mitigation bank or some other measure which sets aside appropriate lands for use by the displaced population.



I-25

1. Efficacy of construction “exclusion” areas

MM 4.4-2(ii) begins by stating that “[c]onstruction exclusions areas...shall be established around occupied burrows, where no disturbance shall be allowed.” (DEIR, at 4.4-47) Yet, the subpart (a) describes how occupied burrows may be disturbed if the birds have not begun egg-laying and incubation or if fledglings are foraging independently and “capable” of independent survival. (Id.) Subpart (b) states that “passive” relocation techniques may be used.



I-26

First, the Mitigation Measure is internally inconsistent. It immediately contradicts its statement that “no disturbance shall be allowed” of occupied burrows. Thus, subparts (a) and (b) should be amended to excise references to the various ways in which occupied burrows can, indeed, be disturbed.

Second, Audubon is not convinced that even a County- or CDFG- approved biologist can reliably conclude that burrowing owls have not begun egg-laying. Burrowing owls are known to lay six to nine eggs, a day apart, making it difficult to identify when an owl is in the process of laying eggs but has not yet initiated incubation. The DEIR should either identify a means by which the biologist can be certain that laying has not been initiated or should be amended to prohibit disturbance at any occupied burrow during the breeding season.

Third, burrowing owls use and rely on “satellite burrows” throughout the breeding season. The DEIR is silent on the protection of “satellite burrows” which must definitely be considered “occupied” for the purposes of being relied upon by burrowing owls.

Fourth, Audubon is not convinced that “passive” relocation is either “passive” or effective. Audubon is not aware of studies demonstrating that such relocation does not have a deleterious impact on the affected owls. The DEIR must demonstrate that “passive” or another other form of relocation does not pose a risk to the owls, especially to juveniles, before it can conclude that implementation of the Mitigation Measure supports a finding of a “Less Than Significant Impact.”

Fifth, the DEIR is silent on the possible effect of destroying burrows in the Project site and driving the owls to other areas in the APWRA which may present a higher risk of injury or mortality for the owls. By making the Project site less suitable for burrowing owls, the Project Sponsor is essentially outsourcing the accommodation of the owls to adjacent lands, which may include older turbines or other conditions less suitable for the owls’ survival (including private lands, where rodenticides and other threats to the owls may be more common). At a minimum, the DEIR must assess these risks and consider whether the impacts are truly “less than significant.”

Sixth, burrows used by burrowing owls also provide habitat for many other species, including California tiger salamander, red-legged frog, reptiles, San Joaquin kit fox, and American badger. Therefore, mitigation (i.e., offset of habitat) should occur for all burrows destroyed, regardless of whether they are currently occupied by burrowing owls.

C. Mitigation Measure 4.4-3 (Bats)

Audubon agrees that impacts to bats due to the Project are significant and likely unavoidable. Audubon believes that Mitigation Measure 4.4-3 is inadequate, however, because it does not make any attempt to reduce predicted impacts to bats before they occur. For example, the Mitigation Measure allows for altering cut-in speed, but only *after* bat mortalities occur. It also does not set a threshold for bat mortality that would trigger required adaptive management measures. If, as indicated by the Mitigation Measure, it would require a finding of “disproportionate mortality” (as is required with birds), then the Mitigation Measure is inadequate because monitoring for bats and bat mortality is even more uncertain than monitoring and estimating mortality for birds. The determination of “disproportionate mortality” would be even more uncertain. In



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Audubon’s experience, uncertainty in mortality data inevitably favors a course of “no action” by the company, resulting in a continuation of the activities creating the impacts without regulation or enforcement by the County or state or federal authorities.

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Mitigation Measure 4.4-3 could be improved by including a provision to create and/or otherwise acquire habitat for the affected bat species in areas free from turbines or other manmade threats to bats. Audubon recommends that the Project Sponsor and the County consider a conservation bank or easement to secure such lands for the benefit of the affected species.

I-28

D. Mitigation Measures 4.4-4 through 4.4-6

Audubon is concerned that Mitigation Measures 4.4-4 through 4.4-6 are not adequate to reduce impacts to “less than significant” levels in part because they rely on minimum mitigation ratios of 1:1 ratio for land lost due to temporary *and* permanent disturbance arising from the Project. (*See, e.g.,* MM 4.4-4(ix), 4.4-6(b), (c)) Because any different ratios that *may* be required by the USFWS and CDFG are purely hypothetical, the adequacy of the Mitigation Measures must be assessed assuming that the 1:1 ratios will be implemented. Moreover, the DEIR should explain how the 1:1 ratio contributes to making the impacts “less than significant.” How can the public and decision makers know that reliance on these ratios actually works?

I-29

As an initial matter, Audubon does not believe that a 1:1 mitigation ratio actually results in a 1:1 replacement of suitable habitat for affected species. The practical consequence of the “compensation” mitigation is that Project proponents are allowed to take habitat that is known to be in use and replace it with habitat that is either (1) not in use (and therefore perhaps less suitable) or (2) already in use. Either result is a net loss for the affected species and the habitat type. Compensation for “taken” or degraded habitat should involve the creation of new habitat—not merely the protection of an existing tract of land that already supports the affected species or habitat type.

In any event, the proposed 1:1 ratio is too low, especially for permanent impacts. (*See, e.g.,* MM 4-6(b) and (c)) Audubon understands that USFWS may require additional lands to compensate for the take of kit fox habitat, but that a hypothetical USFWS requirement cannot be assessed in the DEIR. A minimum of a 3:1 ratio (mitigation habitat to disturbed) of habitat should be required to ensure no impacts to these species. Moreover, if the DEIR includes an alternative in the Mitigation Measure to allow for a less than 1:1 ratio for habitat deemed to be of superior quality, it should describe the alternative in sufficient detail so that the public and decision-makers understand what it entails. As written, the

E. Mitigation Measure 4.4-12 (Impacts on Active Nesting Birds)

Mitigation Measure 4.4-12 provides inadequate protection for nesting raptors and other special status birds because it permits pre-construction surveys as much as 30 days prior

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to commencement of construction. Birds may court, build a nest, and breed within a much shorter period of time.

Based on recent conversations and correspondence with Mr. Dave Johnston, Senior Biologist for the California Department of Fish and Game, we recommend that the EIR consider that since burrowing owls can use the same piece of land for different purposes and that use can also vary seasonally, several surveys should be conducted to determined use throughout the year. While it is preferable to survey a site well in advance of project commencement to avoid surprises, birds in general, and burrowing owls in particular, can occupy a nest overnight. Therefore, a preconstruction survey should be carried out no more than 24 hours before any site activity. (See DEIR, at 4.4-72) If the DEIR’s drafters conclude that a longer period is reasonable, it must provide the scientific basis for its conclusion.

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Audubon also recommends that if “no-disturbance buffer zones” are implemented pursuant to MM 4.4-12(c), the efficacy of the zones be recorded by a qualified ecologist and the information gathered be published and used if additional “no-disturbance buffer zones” are needed. For example, if a nest in a buffer zone fails due to disturbance, the biologist should record the event, describe the nature of the disturbance, report the findings to the County, the California Dept. of Fish & Game, and the U.S. Fish and Wildlife Service. The biologist, in consultation with the appropriate agencies, should then create a larger, more appropriate area for the species the next time a buffer zone is required for the Project.

I-31

III. THE DEIR’s CUMULATIVE IMPACT ANALYSIS IS INCOMPLETE

Audubon strongly disagrees with several conclusions in the DEIR’s cumulative impact analysis, specifically as they relate to impacts on birds and bats. The DEIR must provide a better discussion of the cumulative impacts to the local populations of golden eagles, bats and other species suffering impacts from operations at the Project site and within the APWRA. Moreover, there should be at least some discussion on how these impacts can be reduced—the current DEIR makes no effort to reduce or ameliorate the cumulative impacts on affected species.

I-32

Audubon believes that much of the DEIR’s inadequacy in this regard stems from its reliance on the erroneous baseline as discussed at length above. Specifically, Audubon strongly disagrees with the DEIR’s statement that

[i]t is anticipated that Project implementation would reduce avian mortality during the term of the Project, and final decommissioning would eliminate wind energy facility-related impacts on these species when the Project area is returned to pre-wind farm conditions at the end of the facility’s useful life.

I-33

(DEIR, at 5-17)

First, the DEIR’s “anticipation” reduced avian mortality relies on the erroneous baseline set forth in the document. Audubon doubts that the Project will reduce avian mortality in the Project site beyond what it was in 2009, when there were no turbines operating in the Project site. Instead, the DEIR includes an unspecified “average” of prior (i.e., not “existing”) conditions that increases the baseline of avian mortality. Moreover, the “baseline” assumes that “current” operations include 91 turbines, despite that fewer than 91 turbines exist in the Project site today. Finally, the baseline assumes that 91 old-generation turbines would continue to operate beyond the current permit deadline of 2013. All of these assumptions are erroneous and skew the cumulative impact analysis.

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Second, the DEIR assumes that the Project area will be returned to “pre-windfarm” condition at the end of the Project’s useful life. This conclusion is simply disingenuous. The DEIR does not even discuss the high probability that the Project site will remain a wind farm after the proposed Project’s useful life. It is much more likely that the impacts that are of concern in the DEIR will continue to harm wildlife in the Project area beyond the life of this particular Project. The likelihood of ongoing impacts should be considered in the cumulative impact analysis, as they will likely have ongoing and long-term impacts on bird and bat populations in the area.

I-35

IV. CONCLUSION

Audubon appreciates this opportunity to provide comments on the Tres Vaqueros DEIR. As explained above, Audubon believes that the DEIR can be improved in several ways and hopes that the County will consider its comments seriously. Audubon intends to continue monitoring progress of the DEIR and any permitting associated with this Project to ensure that birds, bats and other wildlife are adequately protected throughout the process.

I-36

If you would like to discuss this matter further, please do not hesitate to contact me at (510) 843-6551 or mlynes@goldengateaudubon.org.

Thank you for consideration of our comments.

Respectfully submitted,

Michael Lynes
 Conservation Director
 Golden Gate Audubon Society

Bob Power
 Executive Director
 Santa Clara Valley Audubon Society

Jimm Edgar
 President
 Mt. Diablo Audubon Society

Evelyn Cormier
 President
 Ohlone Audubon Society

2.3.9 Letter I – Responses to Comments from Golden Gate, Santa Clara Valley, Ohlone and Mt. Diablo Audubon Societies

- I-1 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. Comment noted.
- I-2 The comment does not question the adequacy of the DEIR. CDFG is responsible for administration and enforcement of the California Fish and Game Code, while USFWS is responsible for administration and enforcement of the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The County has coordinated with these agencies. The County recommends that the commenter contact these agencies directly with concerns regarding their regulatory responsibilities, both in general and as they pertain to the Project. See Section 2.2.2, *Master Response on CEQA Issues*, subsection 2.2.2.2.
- I-3 See Section 2.2.2., *Master Response on CEQA Issues*, subsection 2.2.2.3 and Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.8.
- I-4 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4 regarding compensatory mitigation.
- I-5 See Section 2.2.2., *Master Response on CEQA Issues*, subsections 2.2.2.3 and 2.2.2.4.
- I-6 See Section 2.2.2, *Master Response on CEQA Issues*, subsection 2.2.2.3.
- I-7 The Applicant has the right to apply for an extension of its existing Land Use Permit to allow operation of the existing turbines beyond 2013. Thus, the commenter is incorrect in asserting that after 2013 the Project area would necessarily contain either repowered turbines or no turbines at all.
- I-8 The commenter states that elements of the APWRA conservation strategy should not be considered as mitigation for impacts from the Project because the APWRA conservation strategy is not yet decided and Contra Costa County is not a participant. The County cannot respond to this comment because it is not specific enough to identify what elements the commentator perceives as being incorporated into mitigation. In general, the APWRA Scientific Review Committee posts on its website a large amount of published scientific data concerning avian impacts due to wind energy and many of these reports are specific to the Altamont Pass; thus, the County used the website as a resource for anticipating and describing potential Project impacts. Mitigation Measure 4.4-1b(vi) requires monitoring reports be submitted to the APWRA Scientific Review Committee as well as the County because submission to the SRC will likely result in posting on the website and may be the fastest way to disseminate the reports to the public.
- I-9 The County has conferred with USFWS numerous times during the EIR process. USFWS submitted written comments during the Project’s Scoping Period, as published in the Tres

- Vaqueros Scoping Report (January 2010). The County subsequently met with representatives from USFWS in February 2010 to further discuss their concerns. The USFWS ultimately submitted four comments on the DEIR, which are addressed in Responses C-2 through C-4.
- I-10 See Responses B-1 through B-42, which address all comments and concerns posed by the EBRPD.
- I-11 More than one fully-protected species is impacted by turbine collisions. The County disagrees that one species should be highlighted on page 4.4-9 of the DEIR to the exclusion of others. By recent Congressional action, take of “fully protected” species will be allowed in some circumstances involving Habitat Conservation Plans, and a golden eagle take permit program is being developed by USFWS for wind energy facilities. See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.8 regarding take authorization and agency permitting.
- I-12 The commenter is not persuaded by the DEIR’s conclusion that “[b]ecause decommissioning would improve habitat conditions overall relative to existing conditions” that the DEIR need not further evaluate its impacts. However, this comment does not fully characterize the DEIR’s evaluation of impacts related to decommissioning. Page 4.4-30 of the DEIR states “construction relating to the decommissioning process would likely have impacts similar to construction of the proposed wind turbines and related infrastructure; such impacts are evaluated below [in Section 4.4.6 Discussion of Impacts and Mitigation Measures].” It is only after this statement that the DEIR concludes, “However, decommissioning itself (i.e., the removal of wind turbines, roads, and other wind energy facility features and restoration of the site to pre-Project conditions) would improve biological resource-related conditions overall...Because decommissioning would improve habitat conditions overall relative to existing conditions, such impacts are not further evaluated in this analysis.” Note that the DEIR acknowledges/describes Note that the Biological Opinions issued by USFWS for Los Vaqueros Reservoir are acknowledged/described on DEIR pages 4.4-3 to 4.4-4 and that Section 4.4.6.2 of the DEIR also considers impacts on listed species.
- I-13 It is true there is no guarantee that the Project would be decommissioned after 30 years. However, there is basis to assume that decommissioning would occur. In May 2011 Contra Costa County issued a Land Use Permit with a 30-year term for the nearby Vasco Winds Repowering Project and if a Land Use Permit was issued for the Project, then it too would likely have a 30-year term. Permit applicants have the right to apply for permit extensions and modifications and the County would not attempt to deprive the Project Applicant of that right. Approval though is not guaranteed, and an application to modify the Project’s Land Use Permit or extend its term beyond 30 years would be subject to environmental review under CEQA.
- I-14 See Section 2.2.2, *Master Response on CEQA Issues*, subsection 2.2.2.3 and 2.2.2.4.
- I-15 See Section 2.2.2, *Master Response on CEQA Issues*, subsection 2.2.2.3.

- I-16 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- I-17 Comments are noted. This comment does not question the adequacy or accuracy of the analysis in the DEIR. No change has been made in response to this comment. Also see Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- I-18 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- I-19 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4 for discussion regarding the commencement date of fatality monitoring and the duration of the fatality monitoring period. Concerning the commentator's desire for an additional three years of post-construction monitoring on the 10th anniversary of the commencement of operations, rather than the two years required for the Vasco Winds Repowering Project and in this DEIR, the County notes that there is no data to suggest that the monitoring period will not provide adequate data for a robust and useful analysis. The duration of post-construction fatality monitoring recommended by the Wind Turbine Guidelines Advisory Committee is two or more years for high-risk areas (USFWS, 2010), and the DEIR meets this recommendation.
- I-20 The Applicant would cooperate with access for post-construction monitoring studies that are requested by and conducted under the technical oversight of the USFWS and/or CDFG. The Applicant would require review of the work plan and adequate advance notice. Also, monitoring activity must comply with site operations-related Health and Safety rules and procedures. Also see Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- I-21 The County intends for the Technical Advisory Committee (TAC) to be actively involved in all phases and aspects of avian and bat fatality monitoring, including bird utilization and behavior studies, and the two-year follow-up study that begins on the 10th anniversary of the commencement of operations. The County has determined that the mitigation is adequately clear in this regard.
- I-22 Mitigation Measure 4.4-1(b)(v) states: "The program shall monitor each repowered turbine *at least* once per month..." (emphasis added). The County intends for this to be a minimum monitoring frequency, and supplements it with bi-monthly monitoring at a subset (30 percent) of turbines. The County acknowledges published research indicating that monthly search intervals can miss avian and bat fatalities (see DEIR page 4.4-48), but believes that the bi-monthly monitoring subset in conjunction with other published research on scaling factors such as scavenger removal rates will likely be sufficient to adequately estimate fatalities throughout the Project. Use of the language "at least once per month", in coordination with TAC involvement and the guiding principles of adaptive management, reserve the County's right to require additional monitoring if the minimum monitoring frequency does not adequately estimate fatalities.

- I-23 Impacts on bats are addressed in Mitigation Measure 4.4-3, which incorporates the provisions of Mitigation Measure 4.4-1b (avian species) by reference.
- I-24 Monitoring data submitted to Contra Costa County would be public record.
- I-25 See Section 2.2.2, *Master Response on CEQA Issues*, subsection 2.2.2.3 for a discussion of baseline. Page 4.4-46 of the DEIR states that ground disturbance would result in the temporary and permanent loss of burrowing owl foraging habitat, and potential burrowing and nesting habitat, with temporary impacts to 93 acres of annual grassland and permanent impacts to 18 acres of annual grassland. The DEIR also notes that temporarily-disturbed areas would be reclaimed prior to initiating subsequent construction. Immediate reclamation decreases the duration of temporary habitat loss, but the DEIR does not conclude, as the commentator asserts, that reclaimed areas would immediately become available for foraging and nesting. All grassland impacts, temporary and permanent, would be adequately mitigated through the implementation of Mitigation Measures 4.4-4 and 4.4-6.
- I-26 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.6 for a discussion of burrowing owls and revised mitigation. In short, the construction footprint would be marked through fencing or flagging, and no disturbance would be allowed outside the footprint; in effect, everything outside the footprint would be within a no-direct-disturbance zone. Burrows within the footprint would be surveyed and closed, using passive relocation if necessary, because these burrows would be destroyed by Project construction. Burrows outside the footprint but within the protection buffer would be surveyed and covered, also using passive relocation if necessary, and uncovered after construction is complete. This includes satellite burrows. Mitigation for grassland impacts is provided in Mitigation Measures 4.4-4 and 4.4-6b. CDFG generally allows the passive relocation of burrowing owls, and as noted in Mitigation Measures 4.4-2(ii)(a) and (b), passive relocation would be conducted in coordination with CDFG per its approval. The County disagrees with the commentator's fifth assertion, that burrow destruction is potentially driving owls to other less suitable habitat in the APWRA. As is stated in Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.6, overall, burrow closure is expected to be minimal. With the exception of access roads, the Project is proposed on or near ridge tops where burrowing owl burrows are not typically located, and only burrows within the construction footprint would be closed. Repowering the Project area is also anticipated to improve habitat for burrowing owls over the long-term through grassland reclamation. Regarding other burrow-using species, impacts are expected to be minimal as discussed in this response.
- I-27 The reasoning for and application of Mitigation Measure 4.4-3 is discussed in detail in Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.5. The County disagrees with the commenter about this measure; it provides for closing the data gap in bat mortality data through pre- and post-construction monitoring, allows for an adaptive

- management process, and is all under the review and direction of a qualified biologist. Nothing in this suggests ‘no action’ by the Applicant.
- I-28 The County acknowledges that mitigation measure 4.4-3 could be improved as suggested. However, it is too speculative to require such compensation at this time. It is unknown what bats, if any, currently use the Project area and whether they will be significantly impacted by the Project. Ultimately the guiding principles of adaptive management reserve the possibility of habitat acquisition to offset potential impacts on bats.
- I-29 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.7.
- I-30 Pre-construction nesting bird and burrowing owl surveys would be conducted per CDFG guidance as provided for in Mitigation Measures 4.4-2 and 4.4-12. Burrowing owl survey guidance is published as the Burrowing Owl Consortium multi-phase approach to evaluate burrowing owl use (CBOC, 1993) and allows surveys to be conducted within 30 days of ground-breaking activities. Nesting bird survey guidance is not published, but is provided by CDFG regional offices and may vary by region. In the Bay-Delta Region, pre-construction nesting bird surveys are typically conducted no more than 30 days prior to construction. A construction monitor shall also be present at active work sites until initial groundbreaking activities have been completed, per General Biological Resources Mitigation Measure 5, for the protection of biological resources, including nesting birds.
- I-31 Nest protection buffers, which often include specific distances for certain activities, are established on a species-specific, site-specific, and work-specific basis in coordination with CDFG and USFWS. Nest failures would be promptly reported to those agencies by Project biological monitors, thereby providing a feedback loop on the adequacy of protection buffers that can be used to inform and improve the implementation of nesting buffers. In any event, the comment does not allege that the mitigation measure as drafted is inadequate. No change has been made in response to this comment.
- I-32 The commentator does not indicate any specific deficiencies with the cumulative analysis and does not suggest any mitigation for cumulative impacts, but requests a species-specific approach to analyzing cumulative impacts on birds and bats. See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4 for more discussion on the cumulative analysis. Such an approach would only be meaningful when related to population dynamics, but this information is not known. Therefore, it cannot be ascertained the extent to which impacts from the Project and other related projects would combine to result in cumulative impacts on individual species.

While golden eagles are relatively well-studied in the APWRA, this information remains uncertain even for them; a study has shown that golden eagle territories remained occupied from 2000 to 2005, though it is unclear whether it is the local population or emigrants that are keeping these territories occupied (CEC, 2006). This also raises questions about how the “local population” should be defined based on an occupied geographic area. It is also unknown what proportion of population mortality is caused by

wind energy facilities versus disease, starvation, predation, competition, reduced prey abundance, habitat loss, collisions with buildings or other structures, or other factors; consequently. In the face of this uncertainty, Project-specific and cumulative impacts were determined to be significant and unavoidable.

There is scientific evidence to support that repowering and micrositing would significantly reduce avian collision mortality of at least the four focal raptor species, and there is great likelihood that the large amount of high quality data emerging from the APWRA will continue to inform effective adaptive management strategies. Under the adaptive management principle, the County reserves its right to impose further mitigation if one or more repowered turbines causes significantly disproportionate Focal Raptor or bat fatalities. Additionally, an assessment of cumulative impacts over the life of the Project would benefit from providing site access to qualified researchers. Researchers have frequently asserted that assessing the APWRA as a whole unit would shed light on differences in turbine type, bird use, and avian fatalities among windfarms and provide a more accurate and comprehensive assessment of wind energy impacts. Therefore, to address cumulative impacts on birds and bats, Mitigation Measure 5-3 (DEIR pages 5-17 and 5-18) is revised as shown in Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.

- I-33 See Section 2.2.2, *Master Response on CEQA Issues*, subsection 2.2.2.3.
- I-34 See Section 2.2.2, *Master Response on CEQA Issues*, subsections 2.2.2.3 and 2.2.2.4. Also see Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.
- I-35 See Response I-13.
- I-36 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.

California Native Plant Society

East Bay Chapter

P O Box 5597, Elmwood Station. Berkeley, CA 94705

July 19, 2011

William Nelson, Senior Planner
Contra Costa County
Department of Conservation and Development
651 Pine Street, 4th Floor
Martinez, CA 94553

County File #: LP909-2005

Dear Mr. Nelson:

The California Native Plant Society, East Bay Chapter (EBCNPS), appreciates the opportunity to comment on the *Draft Environmental Impact Report (DEIR) for the proposed Tres Vaqueros Windfarm Project*. The California Native Plant Society is a statewide non-profit organization that works to protect California's native plant heritage and preserve it for future generations. The Society's mission is to increase the understanding and appreciation of California's native plants and to preserve them in their natural habitat. We promote native plant appreciation, research, education, and conservation through our 5 statewide programs and 33 regional chapters in California. The East Bay Chapter covers Alameda and Contra Costa Counties and represents some 1200 members.

Pursuant to the mission of protecting California's native flora and vegetation, CNPS submits the following comments for the DEIR:

General Considerations

Wherever possible, avoidance of sensitive species is the best mitigation. In any location that will be subjected to ground disturbance, a complete and well thought out weed management plan is of utmost importance. If a biological survey for weeds has not been carried out at the project site, one will be necessary as part of any successful weed management plan. The results of this survey need to be included in the EIR. The weed species found on site should be compared to California Invasive Plant Council's Invasive Plant Inventory. This list will allow planners to categorize on-site weed species by management difficulty as well as potential ecological impacts. Weed management objectives should include measures to protect sensitive plant communities identified near the O&M building.

J-1

EBCNPS requests information regarding the methodology that was utilized to collect baseline data for the purpose of characterizing the cover and composition of sensitive plant communities. If none was used, we recommend collecting baseline data using the CNPS Relevé methodology.

J-2



California Native Plant Society

Based on our information, no Oregon Oak (*Quercus garryana* var. *garryana*) Woodland has ever been recorded in this part of Contra Costa County. This population may have been misidentified and these woodlands/savannahs are likely comprised of either valley oak (*Quercus lobata*) or blue oak (*Quercus douglasii*).

J-3

Numerous special status plant species have to the potential to occur within the project area based on the presence of suitable habitat, and rare plant surveys were not conducted during the appropriate periods. The following list contains the plant species with a potential to occur within the project area and the typical month they bloom in Contra Costa County. However, focused plant surveys should be conducted after visiting local reference populations to ensure that survey timing appropriately coincides with phenology of these populations. If visiting a reference population is not possible then such information should be obtained from a local expert or professional who has recently visited a population.

J-4

<i>Amsinckia grandiflora</i>	April
<i>Astragalus tener</i> var. <i>tener</i>	April
<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	April
<i>Blepharizonia plumosa</i>	September
<i>California macrophylla</i>	April
<i>Deinandra bacigalupii</i>	August
<i>Eschscholzia rhombipetala</i>	April
<i>Madia radiata</i>	April
<i>Tropidocarpum cappariedeum</i>	April

Specific Considerations

Botanical Surveys

In our 2009 comment letter regarding the scoping process for this project, EBCNPS specifically requested that the plant communities that are crossed by roads or are part of the project be surveyed for and mapped. As of yet, complete documentation of baseline conditions through biological surveys (at the appropriate time of year) has not been completed, and these surveys will need to be carried out before this project is acceptable under CEQA.

J-5

Figure 4.4-3 of the DEIR shows an overview of the project site with new road locations overlaid and some natural communities. However, this figure is an inadequate representation of the plant communities that will be affected by construction. For example, most of the project area is marked simply as “grassland.” This classification needs to be narrowed to show the areas with native perennial grassland present versus non-native annual grassland. This is especially important considering nodding needlegrass (*Nassella cernua*) is listed by CNPS as a locally unusual and significant species that requires CEQA consideration and on the current map, the population(s) of this native plant are indecipherable from weedy non-native grassland. Also, in a figure produced for the scoping process of this project by Ecology and Environment Inc. on 02/16/2009, stands of creeping ryegrass grassland are shown in several locations of the

J-6



California Native Plant Society

project site. These valuable native plant communities need to be surveyeded for, mapped and considered as part of any project plan and accompanying weed management plan. EBCNPS requests that the results of the complete biological surveys at the project site be overlain onto a map of the project area showing locations of significant plant species on the site including the 1 California Rare Plant Rank (CRPR) list 4 species, the 6 California Native Plant Society Locally Unusual and Significant (CNPS LU&S) species already found on site and any other significant species and natural communities that could possibly be affected by construction. Including such a map as part of the document will allow the public to better understand the potential impacts to sensitive species and natural communities and where exactly these impacts will occur. Since the F string has not yet been surveyed, the eventual results of that survey would also be required on such a map.



Decommissioning Old Infrastructure and Turbines

Methods for decommissioning old turbines and infrastructure as part of this project should be thoroughly planned out in the EIR document. EBCNPS agrees that decommissioned sites need to be recontoured and revegetated, and that local ecotypes must be used in any revegetation. Furthermore, performance standards for this revegetation need to be included in the project plan to ensure that any restoration action is successful. Without performance standards for the decommissioning and revegetation portion of this project, the environmental review for this project is incomplete.



J-7

Construction of New Roads and Soil Disturbance

EBCNPS recommends that the project plan call for soil compaction anywhere there will be soil disturbance. This includes construction of new roads, decommissioning of old roads, and anywhere else soil disturbance will occur on the project site. This soil compaction will help prevent invasion by non-native weeds, and could be included as part of the “Noxious Weed and Invasive Plant Control Plan.”



J-8

Noxious Weed and Invasive Plant Control Plan

As mentioned above, a complete survey needs to be completed for weed species at the project site. Based on the results of this (these) surveys, a list and corresponding map of weed species present at the project site should be included as part of the “Noxious Weed and Invasive Plant Control Plan” along with a priority list of weeds with a high probability of spreading due to this project. EBCNPS reminds the project planners that “weed species” in this case refers to exotic species of both graminoid and non-graminoid types. This plan should be included as part of the EIR so that it may be reviewed and if necessary improved before construction for this project commences. As stated above, compaction of disturbed soil needs to be included as part of this plan as loose, disturbed soil facilitates the rapid invasion of weeds.



J-9

Any plan that is created needs to place extra priority on vehicle washing to prevent weed seed from spreading throughout the project site on the tires and undercarriages of project vehicles. At a minimum, pressure washing stations need to be installed to wash vehicles, and strong enforcement measures must be included in the plan for it to be successful. An example is to require a vehicle washing log that is overseen by a project supervisor, thus ensuring all vehicles are washed before entering areas of disturbed soil and before leaving weedy areas.



California Native Plant Society

Impact 4.4-9

Atriplex depressa is listed as present within the project area in Table 4.4-1, but it is not listed as having a potential to be impacted. However, there is potential to indirectly impact this population through the introduction of invasive weed species such as (*Lepidium latifolium*) from construction activities. Weed management efforts should be included for this plant species despite its distance from project activities.

J-10

Mitigation Measures

i. and ii.) These surveys must be completed (at the correct time of year) and the results included as part of the EIR so that the results may be viewed and commented on by the public.

J-11

v.) Enumerating the affected populations and number of individuals impacted should be done to develop appropriate performance standards.

J-12

vi.) The second sentence of this measure should read “The plan, which will include specific target weed species, shall be subject to review and approval by Contra Costa County....”

J-13

We look forward to continuing to follow this project and commenting in the future. If you have any questions, please call me at 510-734-0335 or email me at conservation@ebcnps.org

Sincerely,
Mack Casterman
Conservation Analyst
California Native Plant Society, East Bay Chapter



2.3.10 Letter J – Responses to Comments from California Native Plant Society, East Bay Chapter

- J-2 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- J-3 Comment noted. As stated in the DEIR, Oregon Oak Woodland was identified in the Project area by Ecology and Environment, Inc. (2009).
- J-4 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- J-5 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- J-6 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- J-7 Methods for decommissioning old turbines and infrastructure are discussed in DEIR Chapter 3, pages 3-25 and 3-26 (existing turbines and infrastructure), and page 3-34 (final decommissioning of proposed turbines and infrastructure). While site reclamation/restoration is proposed as part of the Project, and the impacts are evaluated in the DEIR, reclamation ultimately is required and enforced pursuant to Article 88-3.8 of the Contra Costa County Code. The Applicant would be required to submit a reclamation plan providing the details of the proposed reclamation activities for County review and approval. Compliance with the reclamation plan requirements set forth in County Code §88-3.804 would ensure that the restoration and reclamation component of the Project would not cause a significant impact related to revegetation because this section requires revegetation as necessary to return the subject property to the condition existing before the establishment or expansion of the windfarm, based on site-specific characteristics. Therefore, the DEIR has not been revised to include performance standards for the decommissioning reclamation revegetation.
- J-8 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- J-9 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- J-10 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- J-11 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- J-12 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- J-13 The plan required under Mitigation Measure 4.4-9 is a *Noxious Weed and Invasive Plant Control Plan*. This implies the inclusion of specific target weed species. As the commenter did not specify what they consider as weed species to be targeted, the DEIR is not revised to incorporate the requested change.



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CONTRA COSTA

JUL 20 2011

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July 19, 2011

William R. Nelson
Contra Costa County
Department of Conservation & Development
651 Pine Street, 4th Floor - North Wing
Martinez, California 94553

**Re: Tres Vaqueros Windfarm Project Draft Environmental Impact Report
State Clearinghouse Number: 2009032077
Contra Costa County File Number: LP09-2005**

Dear Mr. Nelson:

This firm represents Northwind Energy, Inc. ("Northwind"). We are writing on behalf of Northwind to provide comments on the Draft Environmental Impact Report for the proposed Tres Vaqueros Windfarm Project (the "Project"). Northwind currently operates wind turbines within the "project boundary" as described in the Draft EIR and downwind from four of the 429-foot turbines proposed by the Project. In 2009 and 2010, the Northwind facility generated in excess of 15,260,000 and 13,187,000 kilowatt hours, respectively, of clean, renewable wind energy. Northwind's primary concern is that the four turbines in the Project's "E-string" would be too close to Northwind's downwind turbines, resulting in the loss of wind energy generation from the Northwind turbines and increasing the amount of wear and tear on the wind turbine component parts, which would cause an increase in required maintenance and repair activities. These and other issues raised by the Draft EIR are described below.

K-1

Project Description

1. The Draft EIR includes inconsistent descriptions of Project elements that are relevant to environmental impacts. At page 3-14, the Draft EIR states that turbine pads would be 114 feet in diameter; at page 3-27, the Draft EIR states that turbine pads would be 75 feet in diameter. Similarly, the Draft EIR's Executive Summary and the Project Description at page 3-22 state that the Project includes 8.1 miles of new roads and 2.2 miles of improved roads, a total of 10.3 miles. But Table 3-3 states that the Project requires 9.1 miles of new roads and 2.4 miles of improved roads, and Table 3-4 states that the new roads are 9 miles and improved roads are 2.5 miles, for the same total of 11.5 miles of roads. All sections of the EIR to which the size of the pads and the extent of roads are

K-2

William R. Nelson
 July 19, 2011
 Page 2

relevant – including Air Quality, Biological Resources, Cultural Resources, Transportation/Traffic, and Utilities and Service Systems, should be reexamined to determine which pad sizes and road lengths were used in their analyses and to ensure the correct numbers are analyzed.



2. The EIR should explain the calculation of the Project's total water needs during construction and the water truck trips required. Although air quality mitigation requires use of water for dust suppression during removal of the existing turbines and construction of the Project, Table 3-5 indicates that only three water trucks would be used, traveling 20 miles a day, for a total of 24 days. This seems low and may not be adequate for dust control. We have not found documentation in the Draft EIR or its appendices to explain how water or water transport needs for construction were calculated.

K-3

In addition, Table 3-6 does not separately identify dust control as a "purpose for truck load" – are water trucks a subset of another construction truck category?

K-4

3. The Project Description also states that water may be needed for dust suppression during Project operations. Hazards and Hazardous Materials Mitigation Measure 4.9-5 states that the Project must provide adequate water for fire prevention. What would be the source of this water needed during operations? Is a storage tank (or more than one storage tanks) required? The EIR's Project Description should include this information.

K-5

4. The Draft EIR uses different project baselines to describe existing conditions in different chapters. This is not permitted under CEQA. Most analyses in the Draft EIR use the normal NOP-date baseline; on that date, all 91 existing turbines had either been shut down or had become inoperable. For certain key analyses, however, the Draft EIR uses different baselines. For Energy Conservation, the Draft EIR looks back to 2008, when 60 of the 91 on-site turbines remained operable for at least part of the year. For avian and bat mortality, the Draft EIR uses an even earlier baseline of 91 operating turbines "prior to their operational decline over the period of 2004 through 2009." The Greenhouse Gas Emissions chapter uses yet a fourth baseline – "a three-year average of annual power production data for the wind farm from 2006 to 2008." This is inappropriate because existing conditions must be described consistently throughout the EIR.

K-6

In addition, substantial evidence does not support treating the Tres Vaqueros windfarm as operational in the base case. Even before they were all shut down in early 2009, the turbines at the windfarm had deteriorated to the point that only 60 of the 91 were operating at all and, as another commenter noted at the time, turbine rotors and other debris from defunct turbines littered the facility site. The age of the turbines and the business decision not to maintain or secure them have rendered the turbines inoperable. Therefore, this is not a case of spikes and dips in an ongoing operation; it is a case in which a five-year period of "operational decline" led to the shutdown of the old facility before the NOP was issued. The NOP-date baseline of no operations should be applied throughout the EIR.

K-7

5. The Draft EIR fails to analyze mitigation measures that would reduce the Project's NOx emissions during construction below the threshold of 54 pounds per day. Instead, the Draft EIR

K-8



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 Page 3

treats such mitigation as a Project Alternative. This is an error because mitigation to reduce construction impacts would not require redesign of the Project. Mitigation measures that would reduce the Project's NOx emissions during construction to less than 54 pounds per day must be examined in Chapter 4.3 rather than relegated to the Alternatives chapter.



6. The Draft EIR's discussion of impacts on Northwind's existing facility is not supported by substantial evidence. The first paragraph (page 4.6-6) correctly explains that the Project would "use the energy resource that is the APWRA before the wind reaches an adjacent wind farm. Downwind from the Project area is at least one other existing wind energy producer – Northwind Energy. As the existing Northwind Energy turbines are downwind of the Project, the potential for the project to degrade or deplete the APWRA energy resource via disturbance of the wind flow is considered to be a potential impact." The Draft EIR then claims, however, that the new 429-foot turbines upwind of Northwind's facility would actually cause less effect on that facility than the 60 turbines that were operating in 2008. The analysis that leads to this conclusion is flawed in three respects. First, as noted in Comment 4 above, the NOP-date baseline of no operations should be used throughout the EIR rather than used in most chapters and abandoned for key impact analyses. Thus the baseline for downwind effects on Northwind's turbines should be zero.

K-9

Second, even if a 2008 baseline could be used, the analysis in Chapter 4.6 would be inadequate. At Table 4.6-1, the Draft EIR assumes that all 60 turbines that operated at the Tres Vaqueros Windfarm in 2008 were upwind of the Northwind facility and near enough to cause downwind effects. A review of Draft EIR Figure 3-2a, together with the small size of the first-generation Howden turbines installed at Tres Vaqueros, demonstrates that this was not the case. Not only were many of the Howden turbines not near and not upwind from the Northwind turbines, but they were much smaller; enclosed are figures prepared by Northwind that show the size of the first-generation Howden turbines formerly operated at the Tres Vaqueros site compared to the Project's proposed turbines. To compare the swept area of all 60 turbines, many of which would not have affected the Northwind facility, to the swept area of four enormous new turbines, all of which would affect Northwind, is not an apples-to-apples comparison. A comparison of the upwind turbines actually operating in 2008 to the upwind turbines included in the Project would not show a "beneficial" effect on Northwind's facility.

K-10

The impacts of the E-string on the clean wind energy currently being generated by the Northwind facility appear to be significant and must be analyzed in the EIR. Although the Draft EIR does not map the proposed turbine locations in sufficient detail to determine how near they would be to Northwind's turbines, the E-string is clearly near enough to cause impacts. In addition, although the elevations of the proposed turbines are not provided, they appear to be planned at higher elevations than the Northwind turbines, which would increase the new turbines' effects on the downhill turbines. The wake effect of the E-string turbines would reduce the wind reaching Northwind' turbines, which in turn would reduce energy production of individual turbines and potentially cause entire turbine strings to be shut down. In addition, the E-string turbines would cause downwind turbulence that would require additional maintenance and potentially shorten the lives of Northwind's turbines.

K-11

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Page 4

In addition to properly analyzing the downwind, downhill effects of the E-string, the EIR should identify and analyze a project alternative that either eliminates the E-string from the Project or moves the four E-string turbines to a location that would not affect Northwind's turbines. Such an alternative would allow the Project to achieve most or all of its objectives without diminishing Northwind's generation of clean, renewable energy.

K-12

7. The Draft EIR's discussion of the Project's potential to interfere with microwave, radar, and communications signals, and resulting hazard to public safety, impermissibly defers analysis. Mitigation Measures 4.9-7a and 4.9-7b provide for the applicant to contact NTIA and public safety providers, determine whether the Project would cause significant impacts to their systems, and then "resolve concerns" or "take the necessary steps." This is impermissible under CEQA, which requires that impacts be identified and mitigation measures identified before, rather than after, a project is approved.

K-13

8. With respect to the water needed for the Project, Impact 4.10-12, page 4.10-17, states that Table 3-7 shows that construction of the Project would require approximately 8.4 million gallons of water. Table 3-7 is labeled "Project Schedule" and does not address the water demand estimate. We have been unable to locate this evidence in the Draft EIR. As requested in Comment 2 above, please provide the water demand calculations for construction and operation of the Project so that dust control and fire protection for the project site can be verified.

K-14

9. The discussion of Alternative 1, Complete Decommissioning of Windfarm, should note that this alternative would avoid the Project's downwind impacts on wind energy generation at the Northwind facility. The discussion of Alternative 2, Partial Repowering to Existing Capacity, should note that this alternative could avoid the same impacts.

K-15

Thank you for the opportunity to comment on the Draft EIR.

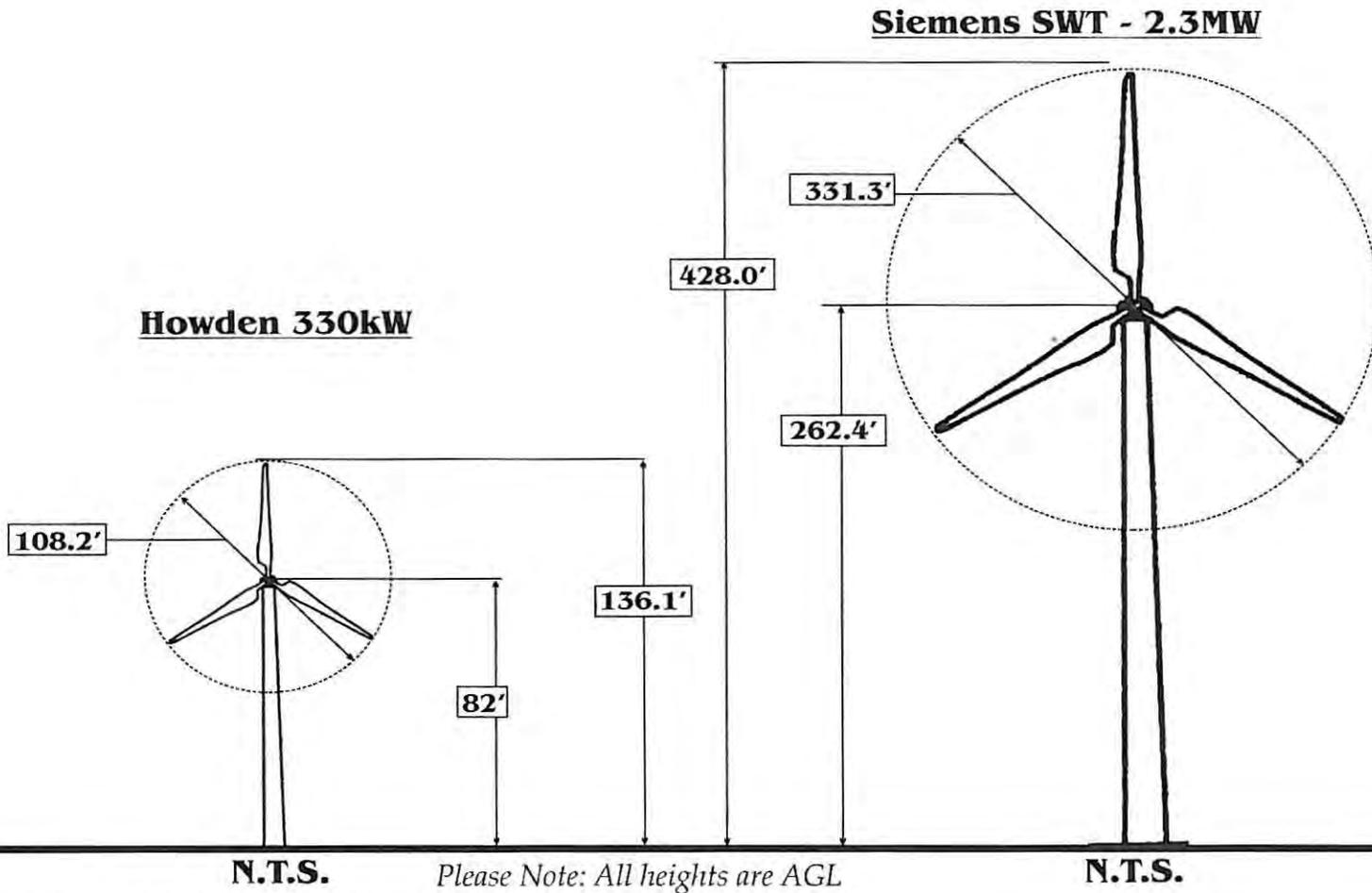
Very truly yours,


Julie Jones

Enclosure

cc: Jeffrey S. Welton, Northwind Energy, Inc.
Frederick W. Noble, Northwind Energy, Inc.

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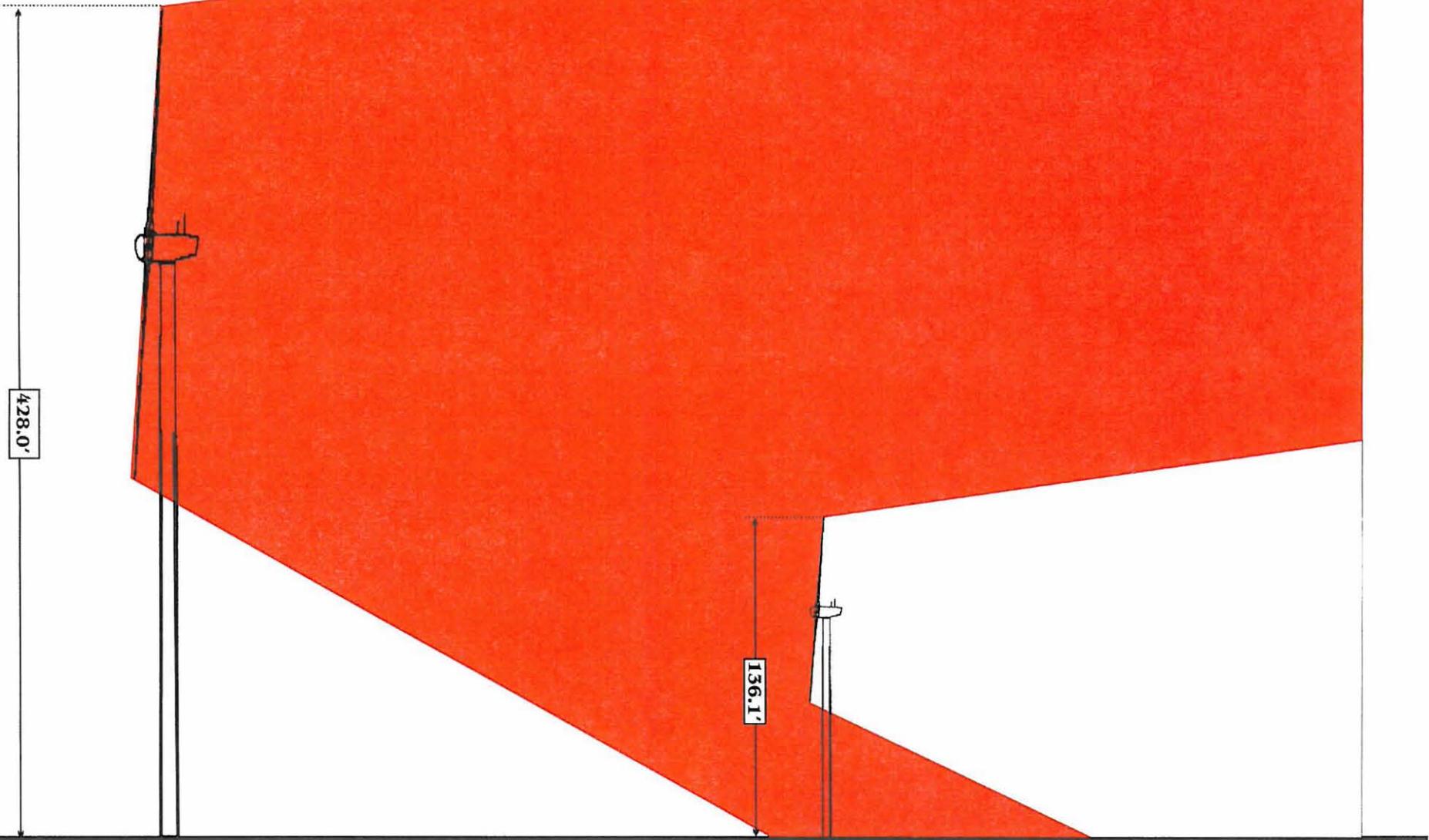


Howden 330/33 330kW
Rotor Diameter = 108.2 feet (33M)
Center of Hub Height = 82 feet (25M)
Total Height = 136.1 feet (41.5M)

Siemens SWT - 2.3MW
Rotor Diameter = 331.3 feet (101M)
Center of Hub Height = 262.4 feet (80M)
Total Height = 428.0 feet (130.5M)

PROPOSED TRES VAQUEROS WINDFARM REDEVELOPMENT WAKE TURBULENCE ZONE COMPARISON

2-197



Siemens SWT - 2.3MW

Rotor Diameter = 331.3 feet (101M)
Center of Hub Height = 262.4 feet (80M)
Total Height = 428.0 feet (130.5M)

Howden 330/ 33 330kW

Rotor Diameter = 108.2 feet (33M)
Center of Hub Height = 82 feet (25M)
Total Height = 136.1 feet (41.5M)

2.3.11 Letter K – Responses to Comments from Perkins Coie (for Northwind Energy, Inc.)

K-1 The commenter's concerns are noted. See Response K-9.

K-2 The Project would result in approximately 9.1 miles of new roads and 2.4 miles of improved roads, and new turbines would be surrounded by pads approximately 75 feet in diameter. All calculations pertaining to disturbed acreages were made using these figures, and thus no changes need to be made to the analyses in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures. To be consistent, the following corrections have been made to the DEIR:

Page 3-14, top paragraph:

The pad for each turbine would encompass an approximately ~~114~~75-foot diameter circle (~~40,351~~ 4,418 square feet) surrounding the turbine.

Page ES-4, fifth and sixth bullets from the top:

- Construct approximately ~~42,885~~ 48,048 feet (~~98.1~~ miles) of new gravel-surfaced access roads and turbine string roads and turn-around areas.
- Improve approximately ~~11,815~~ 12,672 feet (~~2.24~~ miles) of existing roads.

Page 3-22, third paragraph:

The Project would include approximately ~~98.1~~ miles of newly constructed access roads, turbine string roads and turn-around areas, as well as ~~2.24~~ miles of existing roads requiring improvement.

Page 3-27, Table 3-4:

Facilities ^a	Approximate No. of Units	Approximate Total Disturbance Area (acres)	
		Temporary	Permanent
Turbine Pads/Towers (75' diameter around turbine; 4' x 100' crane pad)	21	5.8	2.3
Roads, New	<u>9.1</u> miles	29.4	14.7
Roads, Improved	<u>2.4</u> miles	5.1	1

Note, new roads in Table 3-3 do not add up to 9.1 because of rounding.

K-3 The commenter requests clarification of Project calculations for water needs during construction, and the required number of water truck trips. DEIR Chapter 3, *Project Description*, describes water needs for various aspects of the Project construction

(e.g., for dust abatement and foundation work) on page 3-22. According to Table 3-5, three water trucks would each travel approximately 20 miles per day for 24 days during construction; these figures are based upon estimates provided by the Applicant. Also, as stated on page 3-28, water truck trips are included as part of the total truck loads (as part of numbers on the Road Construction row on the table) shown in Table 3-6.

Based on the new layout described in Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*, the approximate water needs as estimated by the Applicant for 19 turbines are shown on the following table.

Item	Amount	Total	Running Total
19 Turbines	10,000 gallons/foundation	190,000 gallons	190,000 gallons
Substation	10,000 gallons	10,000 gallons	200,000 gallons
10.3 miles of Road	3,168 gallons/ mile/day x 140 days	4,568,256 gallons	4,768,256 gallons
Fire Suppression	10,000 gallons x 10 tanks	100,000 gallons	4,868,256 gallons
Clean Up	25 gallons / person x 50 people x 140 work days	175,000 gallons	<u>5,043,256 gallons</u>
		Allotment	8,205,000 gallons
		Contingency	3,161,744 gallons

As may be observed in the table, sufficient water is available for Project construction.

- K-4 DEIR page 3-28 states, "...there would be approximately 2,322 truck trips by dump trucks, concrete trucks, water trucks, cranes, and other construction and trade vehicles (Table 3-6)." Specifically, water trucks are included Table 3-6 under "Road Construction" and "Turbine Foundation Construction."
- K-5 The commenter requests information regarding sources and storage of water used during operations for dust suppression (DEIR page 3-34). No onsite storage tanks for dust suppression are planned; water for dust suppression and would be brought to the Project area via trucks. As is stated in the DEIR (page 3-22), "Water trucks would be used to minimize the quantity of airborne dust created by construction activities. Approximately 8,205,000 gallons of water would be obtained from the Byron Bethany Irrigation District for dust suppression on access roads and for site work including at the substation."
- Regarding Mitigation Measure 4.9-5, this mitigation applies to the approximately 12-month construction period. For a discussion of source and storage of water used for fire prevention during construction, see Response A-8.
- K-6 See Section 2.2.2, *Master Response on CEQA Issues*, subsection 2.2.2.3.
- K-7 See Section 2.2.2, *Master Response on CEQA Issues*, subsection 2.2.2.3.

K-8 The commenter indicates that the DEIR failed to analyze mitigation measures that would reduce the Project's NO_x emissions to below the threshold of 54 pounds per day, and appears to indicate that Alternative 4 should be presented as a mitigation measure to reduce the construction NO_x emissions impact to a less-than-significant level. Adjustment to the construction schedule to reduce the daily amount of NO_x emissions emitted by construction equipment is presented as Alternative 4 to the Project rather than as mitigation because the adjustment would essentially double the overall construction period, which the County considers to be a fundamental change to the Project. From the County's perspective it would not be appropriate to include such a radical change as a mitigation measure.

K-9 For comments related to the use of the baseline, see Section 2.2.2, *Master Response on CEQA Issues*, subsection 2.2.2.3. Note that the existing 91 Tres Vaqueros turbines, whether operating or not, are in field and represent an existing disturbance to wind flow. Table 4.6-1 in the DEIR presents an estimate of the potential impact to Northwind based on swept area and considered the effects of running only 60 of the 91 existing turbines, as these 60 were the remaining operational turbines when the windfarm shut down in 2008 in anticipation of repowering. As discussed in Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*, a revised site layout has been prepared (see Figure 2.2.1-1). The differences between the Project layout and the Environmentally Preferred Alternative on the E-string are that turbine E5 has been moved slightly to the north and E2 moved to the west. This revised configuration of the alternative would likely have a further reduction of impacts on Northwind from a swept area perspective as E5 is now further north and more likely out of the typical flow which could affect Northwind. As indicated on page 4.6-6 of the DEIR, to better determine the extent of downwind effects of the Project on Northwind modeling studies would need to be performed. This is still the case, however, the Applicant has provided a slightly more detailed modeling study which estimates two points (Pattern Energy, 2011b):

1. The impact of existing Howden turbines at Tres Vaqueros on the Northwind facility is estimated to cause a loss by Northwind of approximately 4.2 percent of its annual energy production.
2. The impact of the Environmentally Preferred Alternative layout on the Northwind facility is estimated to cause a loss by Northwind of approximately 2.5 percent of its annual energy production.

As such, this modeling result supports the argument made in the DEIR that the repowered Tres Vaqueros Windfarm would reduce the impact on the Northwind facility, even though this reduction is small - a reduction of 1.7 percent. It should be noted that this analysis did not consider any effects from the nearby Vasco Winds Repowering Project, currently undergoing repowering.

Another way to examine the commenter's concern about potential downwind effects of the Project turbines on the Northwind facility is based on additional communications between the County and Northwind. Northwind has indicated that a minimum separation

distance of 10 rotor diameters would be an adequate separation distance (Northwind, 2011). The new site layout discussed in Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*, incorporates Siemens 2.3-101 turbines. As these turbines have a rotor diameter of 331.3 feet, a 10 rotor diameter separation would be 3,313 feet. At this distance one turbine in the new layout, E4, would have an effect on Northwind turbines. Turbine E4 would be approximately 2,720 feet (or about 8.2 rotor diameters) from the nearest Northwind turbine. At less than 10 rotor diameters from E4, eight of the 100+ Northwind turbines would be potentially affected.

The capacity of the Northwind facility is approximately 14 megawatts (MW). Conservatively assuming that the facility consists of 100 turbines, the average capacity of each turbine would be 140 kilowatts, meaning the combined capacity of the eight impacted turbines would be 1,120 kilowatts (1.12 MW). Each proposed Siemens turbine has a 2.3 MW capacity. Thus, in the worst-case scenario, if turbine E4 caused a complete shutdown of the eight impacted Northwind turbines, there would be an overall net gain in energy production of approximately 1.18 MW.

In summary, whether based on the ratios of swept area as discussed in DEIR Section 4.6, *Energy Conservation*, the Applicant's modeling of energy losses, or rotor diameter distances, the Project would result in a net gain in renewable energy production. Consequently, the DEIR has not been revised.

K-10 Refer to Response K-9.

K-11 Refer to Response K-9.

K-12 Refer to Response K-9.

K-13 Mitigation Measures 4.9-7a and 4.9-7b do not defer mitigation; they require the Applicant to contact the indicated agencies and obtain necessary approvals prior to the County issuing building permits. This was necessary because at the time of the DEIR's preparation and even at this late stage of the CEQA review, a number of aspects of the necessary interaction with those agencies cannot be complete until final Project design is known. The Applicant would have to demonstrate to the County that they have received such reviews and approvals before construction can occur. "Impermissible deferral of mitigation measures occurs when an EIR puts off analysis or orders a report without either setting standards or demonstrating how the impact can be mitigated in the manner described in the EIR." *City of Long Beach v. Los Angeles Unified School District*, 176 Cal.App.4th 889, 915-16 (2009). The mitigation measures at issue in the DEIR set a standard: coordinate with the relevant agencies and provide evidence to the County before building permits are issued. Consequently, no change has been made to the DEIR in response to this comment.

- K-14 The commenter is correct that the indicated text incorrectly referred to Table 3-7. The text on DEIR page 4.10-7, top paragraph, has been corrected in response to this comment:

As ~~shown in Table 3-7~~ discussed in Chapter 3, *Project Description* (page 3-22), construction of the proposed Project would require the use of a total of approximately 8.4 million gallons of water.

See Responses A-8, K-3, and K-5.

- K-15 The commenter's remark is noted. The first paragraph on DEIR page 6-12 is revised as follows:

Energy Conservation

Alternative 1 would have the same impacts as the Project during decommissioning. Construction-phase energy usage would not occur, which would be a beneficial impact. Furthermore, removal of the existing turbines would reduce current downwind impacts on wind energy generation at the nearby Northwind facility, which would also be a beneficial impact. However, because all existing turbines would be removed, Alternative 1 would have an adverse effect on long-term energy conservation efforts because the lost renewable generation capacity would have to be made up by some other source or combination of sources that would have to be constructed elsewhere in the California energy grid.

The second paragraph on DEIR page 6-14 is revised as follows:

Energy Conservation

Alternative 2 would have the same impacts as the Project during the decommissioning and removal of the existing turbines but would also tend to have reduced impact on construction energy usage due simply to the reduced number of turbines to be installed, potentially shorter construction schedule, and reduced infrastructure. Depending on placement of this reduced number of turbines, there would likely tend to be reduced downwind impacts on wind energy generation at the nearby Northwind facility, which would also be a beneficial impact. Because fewer turbines would be installed than the Project, Alternative 2 would have a negative effect on energy conservation because of the lesser amount of wind-generated energy.

Scott Cashen, M.S.—Independent Biological Resources and Forestry Consultant

July 18, 2011

Mr. William Nelson
Contra Costa County
Department of Conservation & Development
651 Pine Street, 4th Floor – North Wing
Martinez, CA 94553

Subject: Comments on the Draft Environmental Impact Report Prepared for the Tres Vaqueros Windfarm Repowering Project

Dear Mr. Nelson:

This letter contains my comments on the Draft Environmental Impact Report (DEIR) prepared for the Tres Vaqueros Windfarm Repowering Project (Project). The Project would “repower” the existing wind energy facility by decommissioning and removing 91 existing wind turbines and associated infrastructure (including concrete foundations, transformers, and electrical equipment), and replacing them with up to 21 new, larger and more efficient turbines.

I am an environmental biologist with 19 years of professional experience in wildlife ecology, forestry, and natural resource management. To date, I have served as a biological resources expert for 27 projects, including 16 renewable energy facilities. My experience in this regard includes testifying before the California Energy Commission. My educational background includes a B.S. in Resource Management from the University of California at Berkeley, and a M.S. in Wildlife and Fisheries Science from the Pennsylvania State University.

I have gained particular knowledge of the biological resources in the Project area through several years of field surveys in the Project vicinity, a site visit, and through my involvement in several other regional development projects. The comments contained herein are based on this knowledge, as well as my review of the environmental documents prepared for the Project, a review of scientific literature pertaining to biological resources known to occur in the Project area, and the knowledge and experience I have acquired during more than 19 years of working in the field of natural resources management.

The DEIR Does Not Ensure Compliance with the Bald and Golden Eagle Protection Act

The Project area contains several golden eagle nest sites and an abundance of high quality foraging habitat.¹ Golden eagles are protected by the Bald and Golden Eagle Protection Act (“Eagle Act”). The U.S. Fish and Wildlife Service (USFWS) requires a take permit to be issued for “take” of bald or golden eagles where the taking is associated

↓
L-1

¹ DEIR, Figure 4.4-5. See also Table 4.4-1.

with, but not the purpose of the activity, and cannot be practicably avoided. Take includes causing a decrease in golden eagle productivity by substantially interfering with normal breeding, feeding, or sheltering behavior.² Although the Project is likely to result in the take of golden eagles, the DEIR fails to identify whether the Project will comply with the Eagle Act, and whether it will require issuance of a take permit for impacts to golden eagles.



The DEIR Has Not Adequately Established Golden Eagle Abundance and Use of the Project Area

The USFWS has established *minimum* inventory and monitoring efforts that “are essential components” to avoiding and minimizing disturbance and other kinds of take of golden eagles.³ The DEIR fails to identify whether these minimum inventory and monitoring efforts have been conducted for the Project, or whether they will be required prior to Project approval. I concur with the USFWS that inventory data are essential to evaluating the impacts of a proposed activity and for avoiding and minimizing take of eagles. Consequently, data that conform to the minimum inventory requirements specified by the USFWS need to be provided before the DEIR’s impact assessment and proposed mitigation measures can be fully evaluated.

L-2



The DEIR Does Not Provide Sufficient Mitigation for Project Impacts to Golden Eagles and Other Sensitive Bird Species

I have several comments pertaining to the DEIR’s proposed mitigation for Project impacts to bird species. First, however, I applaud the Applicant’s effort to reduce the potential for bird mortality by implementing Dr. Shawn Smallwood’s siting recommendations. Dr. Smallwood is an excellent and credible biologist with a tremendous amount of knowledge on avian ecology and mortality at wind energy facilities. I encourage the Applicant to continue to capitalize on Dr. Smallwood’s (or similarly well qualified avian biologist’s) expertise for the monitoring and adaptive management phases of the Project.

L-3



I have the following comments pertaining to the DEIR’s proposed mitigation for Project impacts to birds:

1. The Project area supports a large resident population of golden eagles.⁴ The Project is likely to have several direct and indirect impacts on this population. Arguably the most significant Project impact on golden eagles will be the mortality from wind turbine strikes. The loss of adults, fledglings, or sub-adult eagles would have a significant impact on golden eagle management for the Contra Costa Water District and may have a negative impact on the stability of

L-4



² Id.

³ Pagel JE, DM Whittington, GT Allen. 2010 Feb. Interim Golden Eagle inventory and monitoring protocols; and other recommendations. Division of Migratory Birds, United States Fish and Wildlife Service. p. 2.

⁴ DEIR, p. 4.4-2.

- the population of eagles in the greater area.⁵ Although the DEIR incorporates several measures to minimize impacts to golden eagles, it does not provide any measures to compensate for Project-related mortality to eagles. Compensatory mitigation measures are described in the USFWS’s Draft Eagle Conservation Plan Guidance for wind energy facilities.⁶ The measures recommended by the USFWS are feasible, and they should be incorporated into Project’s mitigation program in an effort to achieve a no-net-loss standard for the local eagle population.
2. The DEIR states the post-construction monitoring “shall include collecting field data on behavior, utilization and distribution patterns of affected avian species.”⁷ The value that this mitigation measure will have to the adaptive management process cannot be evaluated due to the lack of specific information on the proposed monitoring. The DEIR must clarify the species that will be monitored (i.e., all species that collide with turbines or only the four focal species), the field methods that will be used, and the level of effort that will be devoted to the monitoring program (e.g., survey area, duration, frequency, and man-hours). L-5
 3. There is considerable scientific evidence that avian mortality estimates may be a function of the search area (i.e., radius from the turbine), search frequency, and the site-specific scavenger removal rate. However, the DEIR fails to identify the search radius for post-construction monitoring. Additionally, it fails to identify the methods that will be used to estimate the site-specific scavenger removal rate, or whether a scavenger removal rate will be incorporated into estimates of avian mortality. L-6
 4. According to the DEIR, 70% of the turbines will be monitored for avian mortality at least once per month, and 30% of the turbines will be monitored twice per month. However, the DEIR does not provide any statistical support for the proposed monitoring frequency, which is considerably less intense than most past avian fatality studies. L-7
 5. The DEIR indicates “[i]f one or more turbines are causing significantly disproportionate Focal Raptor or bat fatalities, then Contra Costa County may, in consultation with the TAC, consider additional focused monitoring and/or management measures designed to reduce the fatalities attributable to those turbines.”⁸ This mitigation measure is unenforceable and lacks certainty. Specifically, the DEIR must identify the test statistic, probability level, and statistical procedure that will be used to determine significance. Additionally, to ensure appropriate mitigation is implemented, the DEIR must establish objective criteria that *will* (as opposed to *may*) trigger additional monitoring and/or management. L-8
 6. Preliminary studies from two operational repowering projects in the APWRA L-9

⁵ Ecology and Environment, Inc, 2009. Final Biological Resources Report for the Tres Vaqueros Wind Repower Project. Prepared for Contra Costa County, California. February 19, 2009.

⁶ U.S. Fish and Wildlife Service. 2011 Jan. Draft Eagle Conservation Plan Guidance. Available at: <http://www.fws.gov/windenergy/>.

⁷ DEIR, p. 4.4-44.

⁸ Id.

suggest that repowering with newer generation turbines will result in a reduction in the estimated total number of avian fatalities.⁹ However, these studies have not been thoroughly analyzed or peer reviewed, and they should not be used to expect *a priori* that new generation turbines will kill fewer birds. By sweeping a larger area of sky, each of the larger wind turbines poses a greater likelihood of killing more birds per turbine. Additionally, the increased height of the larger turbines may increase mortality to species that fly at higher altitudes (e.g., migratory songbirds). Consequently, it may not be appropriate for the Project’s mortality monitoring program to be limited to the four focal species that were derived from older, shorter turbines. Instead, the monitoring program should incorporate an adaptive management approach in which additional focal species are incorporated into the mortality study based on the results of the post-construction monitoring data and the threat to the respective species’ population.

7. The DEIR indicates binding instruments of the Adaptive Management Plan could include “[s]pecific percentage-goal reductions in avian mortality or type-specific avian mortality, such as a reduction in overall raptor mortality or species-specific raptor mortality achieved within a specified time period. The percentage-goal reductions will be measured from site-specific baseline fatalities presented in Table 4.4-2.”¹⁰ I have several comments pertaining to this proposed measure. First, the settlement agreement between Alameda County and environmental organizations requires adaptive management measures if a 50 percent reduction in focal raptor mortality is not achieved.¹¹ As a result, the DEIR should explicitly state that the primary objective of the Adaptive Management Plan is a 50 percent reduction in focal raptor mortality. Second, the DEIR needs to clarify the baseline that will be used to measure fatality reductions (Table 4.4-2 presents both the average number of birds killed per year and the fatalities per MW per year). Using fatalities per MW per year as the baseline is likely problematic given the increased capacity of the Project (over the previous project). Third, a percentage reduction in fatality is a relatively meaningless goal unless it is considered in conjunction with population dynamics. For example, suppose mortality from wind turbines is contributing to a population decline. If individuals in the population are evenly distributed, their density will decrease as the population declines. This would lead to less wind turbine fatalities over time, but equally severe consequences on the viability of the population. In short, reducing mortality by 50% does little to conserve the population if the population cannot withstand the additive mortality (albeit reduced by 50%) caused by the turbines. As a result, the Project’s Adaptive Management Plan must consider population dynamics, and provisions to adjust the adaptive management goals to meet conservation objectives.

L-10

⁹ DEIR, p. 4.4-40.

¹⁰ DEIR p. 4.4-45.

¹¹ DEIR, p. 4.4-12.

The DEIR Fails to Provide Adequate Mitigation for Project Impacts to Bats

Several special-status and common bat species occur, or may occur, on the Project site. The Project’s effect on bat species is unknown. However, there is evidence that taller turbines, such as those that will be installed on the Project site, may increase bat fatalities.¹²

The DEIR’s proposed mitigation for Project impacts to bats includes post-construction fatality surveys.¹³ The DEIR states “[t]hese surveys may be seasonal, or dependent upon an initial intense survey, as directed by the designing biologist.”¹⁴ This mitigation measure is too vague to be evaluated. The DEIR must establish minimum standards for a) the monitoring period (i.e., number of years); b) the search radius around each turbine; c) establishing the scavenger removal rate; d) scientific analysis; and e) reporting. Additionally, deferral of the monitoring frequency to the “designing biologist” does not ensure the proposed mitigation will be effective, especially given the problems associated with previous bat fatality studies.¹⁵ Consequently, the DEIR must incorporate a means (e.g., agency approval or independent peer review) of ensuring the monitoring frequency proposed by the designing biologist is scientifically defensible.

L-11

The DEIR requires the Applicant to prepare and implement the same Adaptive Management Plan principles for bats that are being applied to avian species.¹⁶ Adaptive management is not possible unless management objectives are explicitly stated.¹⁷ The primary objective of the avian species Adaptive Management Plan is to have a 50 percent reduction in focal raptor mortality. However, the DEIR lacks a comparable objective for bat mortality. For adaptive management to be considered a potentially effective mitigation measure, the DEIR must first establish the management objectives pertaining to bat mortality.

The DEIR Fails to Provide an Adequate Assessment of Project Impacts on the Burrowing Owl

The California Burrowing Owl Consortium (CBOC) developed guidelines for burrowing owl surveys and mitigation. The California Department of Fish and Game (CDFG) has adopted these guidelines. Protocol surveys for burrowing owls have not been conducted for the Project. Instead, protocol surveys for burrowing owls have been incorporated as a pre-construction survey requirement. Deferral of the surveys circumvents the objectives of the CBOC/CDFG survey protocol, which states:

L-12

There is often inadequate information about the presence of owls on a project site until ground disturbance is imminent. When this occurs there is usually

¹² DEIR, p. 4.4-49.

¹³ DEIR, p. 4.4-50.

¹⁴ Id.

¹⁵ See DEIR, p. 4.4-48.

¹⁶ Id.

¹⁷ Williams, B. K., R. C. Szaro, and C. D. Shapiro. 2009. Adaptive Management: The U.S. Department of the Interior Technical Guide. Adaptive Management Working Group, U.S. Department of the Interior, Washington, DC.

insufficient time to evaluate impacts to owls and their habitat. The absence of standardized field survey methods impairs adequate and consistent impact assessment during regulatory review processes, which in turn reduces the possibility of effective mitigation.¹⁸

To provide an adequate impact assessment and effective mitigation, the results of protocol surveys for burrowing owls must be thoroughly vetted as part of the Project’s environmental review process.

According to the DEIR, “[t]he Applicant shall follow current CDFG burrowing owl survey guidance, which is presently the Burrowing Owl Consortium multi-phase approach, to evaluate burrowing owl use (CBOC, 1993).”¹⁹ However, the DEIR fails to identify a means for implementing the survey guidance prior to ground disturbance. Specifically, the protocol dictates that the nesting season survey should be conducted during the peak of the breeding season (April 15 and July 15).²⁰ According to the DEIR, Project ground disturbance activities (which may impact burrowing owls) are scheduled to begin in March 2012.²¹

According to the DEIR, “[f]our or more survey visits performed on separate days *may* be required to assure with a high degree of certainty that site modifications, such as grading, do not take owls.”²² The proposed mitigation measure lacks certainty. CBOC/CDFG survey guidance requires four site visits on separate days.²³ The Applicant should be required to adhere to these guidelines.

The DEIR requires the Applicant to submit a burrowing owl survey report to the CDFG.²⁴ However, the DEIR fails to establish a timeline for report submittal, minimum reporting standards, or a provision for its approval. At a minimum, the DEIR should require a burrowing owl survey report that adheres to the guidelines described in the CBOC/CDFG protocol.²⁵

The DEIR’s proposed mitigation may include the creation of new burrows and the passive relocation of burrowing owls. According to the DEIR, if burrowing owls require passive relocation, “the area shall be monitored daily for one week to confirm owl use of the replacement burrows before formerly-occupied burrows may be excavated.”²⁶ Burrowing owls do not always colonize artificial burrows. As a result, the DEIR must



L-13

L-14

L-15

L-16

¹⁸ The California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Available online at: <http://www.dfg.ca.gov/wildlife/species/docs/boconsortium.pdf>

¹⁹ DEIR, p. 4.4-46.

²⁰ The California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Available online at: <http://www.dfg.ca.gov/wildlife/species/docs/boconsortium.pdf>

²¹ DEIR, Table 3-7.

²² DEIR, p. 4.4-47. [emphasis added]

²³ The California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Available online at: <http://www.dfg.ca.gov/wildlife/species/docs/boconsortium.pdf>

²⁴ Id.

²⁵ See The California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Available online at: <http://www.dfg.ca.gov/wildlife/species/docs/boconsortium.pdf>

²⁶ DEIR, p. 4.4-47.

identify the remedial measures that will be implemented if evicted owls do not colonize the replacement burrows.



The long-term use of artificial burrows and the ability of these burrows to maintain burrowing owl populations are unknown.²⁷ As a result, the USFWS concluded the conservation value of artificial nest burrows needs to be determined.²⁸ The USFWS further concluded that follow-up research needs to be conducted to determine the breeding success of relocated burrowing owls.²⁹ Therefore, the DEIR needs to require a long-term mitigation and monitoring program that demonstrates the Project has not diminished reproductive output of the local burrowing owl population. The mitigation and monitoring program should incorporate objective success criteria and triggers for remedial actions.

L-17

The DEIR Lacks Adequate Mitigation for Project Impacts to the California Red-legged Frog and California Tiger Salamander

Translocation

Project construction has the potential to directly affect California red-legged frogs and California tiger salamanders and their habitat.³⁰ To minimize direct impacts to these species the DEIR requires the Applicant to prepare a Sensitive Species Relocation Plan at least three weeks before the start of groundbreaking.³¹ Dodd and Seigel (1991) reviewed projects involving relocation, repatriation, and translocation (“RRT”) of amphibians and reptiles. The authors concluded “[m]ost RRT projects involving amphibians and reptiles have not demonstrated success as conservation techniques and should not be advocated as if they are acceptable management and mitigation practices.”³²

L-18

RRT projects fail for many reasons. First, animals that are captured, handled, and moved often become stressed. This may lead to the increased production of lactic acid or “stress hormones” in the organism.³³ These physiological changes often cause a non-trivial amount of mortality. Second, when an animal is moved to an unfamiliar location it has no knowledge of the habitat resources essential for its survival (e.g., food, water, and cover). The lack of cover in an unfamiliar setting makes a prey species an easy target for predators. Even if the translocated animal is placed in an area with readily available resources, aggressive competitors may prevent the displaced animal from accessing the



²⁷ Klute DS, LW Ayers, MT Green, WH Howe, SL Jones, JA Shaffer, SR Sheffield, TS 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.

²⁸ Id.

²⁹ Id.

³⁰ DEIR, p. 4.4-51.

³¹ DEIR, p. 4.4-55.

³² Dodd CK Jr., RA Seigel. 1991. Relocation, repatriation, and translocation of amphibians and reptiles: Are they conservation strategies that work? *Herpetologica* 47(3): 336-350.

³³ Tracy C.R., K. E. Nussear, T. C. Esque, K. Dean-Bradley, C. R. Tracy, L. A. DeFalco, K. T. Castle, L. C. Zimmerman, R. E. Espinoza, and A. M. Barber. 2006. The importance of physiological ecology in conservation biology. *Integrative and Comparative Biology*. pp. 1–15.

resources, and from mating. Third, many reptile and amphibian species exhibit an intrinsic homing response that is energetically taxing, and that may preclude procurement of food and cover resources. Elevated stress hormone levels an organism generates when it is handled and moved may synergistically interact with increased energetic demands to further reduce possibility of survival.

Recent research indicates translocating animals may do more harm than good. Translocating animals to an area that is already occupied by the organism may cause territorial disputes with existing residents.³⁴ This often leads to detrimental effects on both the translocated and resident animals. Translocation may result in an artificially inflated population that exceeds habitat carrying capacity. When this occurs, there will be either (a) compensatory mortality; or more likely (b) the entire population will crash.³⁵ In addition, many organisms carry communicable diseases. As a result, translocating animals may adversely affect population viability by spreading disease and parasites.³⁶

These issues exemplify the need for the Applicant to develop a thorough and well-crafted Translocation Plan that is subject to peer-review before any translocations occur. At a minimum, the Translocation Plan should include:

1. A thorough habitat suitability analysis of proposed receptor sites.
2. An evaluation of the health of animals at the proposed receptor sites.
3. Procedures for screening the health of captured animals, and contingency plans (e.g., quarantine) for any diseased animals.
4. An estimate of the size of the receiving population, and an assessment of the habitat's carrying capacity.
5. An assessment of threats at the release site (e.g., predators, pesticide use, land management activities), and a discussion of how these threats have been (or will be) mitigated.
6. The procedures that will be implemented to promote the safe capture, handling, transport, and release of translocated animals.
7. A detailed description of the monitoring and adaptive management measures that will be implemented after animals are released.

Habitat Compensation

The DEIR proposes habitat compensation at a 1:1 or higher ratio for the Project's permanent impacts to California tiger salamander and California red-legged frog

³⁴ Goldingay RL, PA Kelly, DF Williams. 1997. The Kangaroo Rats of California: endemism and conservation of keystone species. Pacific Conservation Biology. Volume 3; p. 47-60. Sydney: Surrey Beatty & Sons.

³⁵ Meffe GK, CR Carroll. 1997. Principles of Conservation Biology, 2nd edition. Sinauer Associates, Inc., Sunderland, MA.

³⁶ Berry KH, MM Christopher. 2001. Guidelines for the field evaluation of desert tortoise health and disease. Journal of Wildlife Diseases 37(3): 427-450.



L-19



aestivation habitat.³⁷ The DEIR states “[a] higher ratio may result in a less than 1 square foot by 1 square foot replacement on the ground if higher quality habitat than that affected by the Project is obtained.”³⁸ Many wildlife-habitat relationships are complex and poorly understood. Consequently, the DEIR must provide a definition for “higher quality” habitat and establish the habitat parameters that will be measured to justify reducing the 1:1 compensation ratio.



The DEIR Does Not Provide Adequate Mitigation for Project Impacts to the Alameda Whipsnake, Western Pond Turtle, and San Joaquin Coachwhip

The DEIR proposes pre-construction surveys, relocation of animals, and habitat compensation for potentially significant Project impacts on the Alameda whipsnake, Western pond turtle, and San Joaquin coachwhip.³⁹

L-20

Pre-construction Surveys

The DEIR’s proposed mitigation includes pre-construction surveys for special-status reptiles. The DEIR allows these surveys to be conducted concurrent with other pre-construction wildlife surveys. This provision lacks scientific support. Specialized surveys (e.g., trapping) are required to reliably detect snakes. The DEIR must require these surveys, or else the Project may cause unmitigated significant impacts to special-status snake species.



Translocation

Translocating reptiles has the potential to have the same suite of adverse effects described for amphibians (see discussion of proposed mitigation for the red-legged frog and tiger salamander). However, the DEIR lacks any requirements of the reptile translocation program other than animals shall be relocated 0.5-mile or farther from the work site.⁴⁰ Animals that are moved 0.5-mile will likely be transported outside of their respective home range. These animals are more likely to exhibit a homing response that will make them more susceptible to mortality (including Project-related vehicle strikes). As with the amphibian translocation effort, the DEIR must require the Applicant to develop a thorough and well-crafted Translocation Plan that is subject to peer-review before any reptile translocations occur.



L-21

Habitat Compensation

The DEIR indicates that the Applicant will be required to compensate for temporary and permanent impacts to habitat for special-status reptiles. However, the DEIR lacks any information on the compensation, including the compensation ratio that will be applied, the enforcement mechanism, and the means for preserving and managing



L-22

³⁷ DEIR, p. 4.4-56.

³⁸ Id.

³⁹ DEIR, p. 4.4-58.

⁴⁰ Id.

compensation lands in perpetuity.

The DEIR Fails to Minimize Potential Impacts to the American Badger

American badgers are known to occur on the Project site.⁴¹ The DEIR requires pre-construction surveys to mitigate Project impacts to badgers. The DEIR indicates these surveys may be conducted concurrent with other required winter/spring month pre-construction surveys (e.g., pre-construction surveys for kit fox and burrowing owl).⁴² The proposed mitigation measure does not adequately minimize potential impacts to badgers. Some badgers dig a new den each night.⁴³ As a result, surveys that are conducted several days or weeks before ground disturbance are not sufficient to avoid take of badgers. Consequently, the DEIR must require pre-construction clearance surveys for badgers immediately before all ground disturbance activities.

L-23

The DEIR Fails to Minimize Potentially Significant Impacts to Nesting Birds

Several bird species have the potential to nest in the Project area. Nesting birds are protected by the Migratory Bird Treaty Act. To avoid Project impacts to nesting birds the DEIR requires pre-construction surveys for nesting birds no more than 30 days prior to commencement of construction.⁴⁴ The proposed mitigation measure does not adequately avoid and minimize potential impacts to nesting birds.

L-24

Many birds build a nest and initiate egg laying in less than 30 days. As a result, surveys that are conducted 30 days prior to construction are not a sufficient avoidance measure. For solar energy facilities, the Bureau of Land Management and California Energy Commission require at least two pre-construction nesting bird surveys that are separated by a minimum of 10 days. One survey is required within the 10 days preceding initiation of construction activity. Additional follow-up surveys are required if periods of construction inactivity exceed one week in any given area.⁴⁵

The DEIR Does Not Adequately Establish Baseline Conditions for Special-Status Plant Species

The Project area provides suitable habitat for 34 special-status plant species.⁴⁶ The Applicant has not conducted the protocol surveys necessary to document the presence, abundance, and distribution of these species. Instead, surveys were limited to three days of reconnaissance-level investigation in June and July 2008.⁴⁷ The results of these

L-25

⁴¹ DEIR, Table 4.4-1.

⁴² DEIR, p. 4.4-63.

⁴³ Messick JP, MG Hornocker. 1981. Ecology of the badger in southwestern Idaho. Wildl. Monogr. No.76. 53pp.

⁴⁴ DEIR, p. 4.4-72.

⁴⁵ U.S. Bureau of Land Management and California Energy Commission. 2010. Calico Solar Project: Staff Assessment and Draft Environmental Impact Statement, Docket No. (08-AFC-13), March 2010.

⁴⁶ DEIR, p. 4.4-65.

⁴⁷ Id.

surveys are now outdated.⁴⁸

↑ L-25

The DEIR provides a good discussion of the limitations of the existing botanical survey data, including the species that would have been difficult to detect during the 2008 survey period.⁴⁹ To address these limitations, one of the principal components of the DEIR’s proposed mitigation is that the Applicant will be required to conduct additional surveys that adhere to CDFG protocol.⁵⁰ The CDFG protocol provides the following discussion pertaining to the importance of protocol botanical surveys:

“[t]he purpose of these protocols is to facilitate a consistent and systematic approach to the survey and assessment of special status native plants and natural communities so that reliable information is produced and the potential of locating a special status plant species or natural community is maximized. They may also help those who prepare and review environmental documents determine when a botanical survey is needed, how field surveys may be conducted, what information to include in a survey report, and what qualifications to consider for surveyors. The protocols may help avoid delays caused when inadequate biological information is provided during the environmental review process; assist lead, trustee and responsible reviewing agencies to make an informed decision regarding the direct, indirect, and cumulative effects of a proposed development, activity, or action on special status native plants and natural communities; meet California Environmental Quality Act (CEQA) requirements for adequate disclosure of potential impacts; and conserve public trust resources.”⁵¹

L-26

Thus, the results from protocol botanical surveys are required to fully disclose Project impacts, to make an informed decision on the Project, and to meet CEQA requirements. Without reliable information on the species that occur—and as a result, the level and types of Project impacts on those species—the DEIR cannot conclude proposed mitigation would reduce Project impacts to less than significant levels. A conclusion of this nature would rely on the presumption that all impacts can be mitigated to a less than significant level. Such a presumption is unrealistic and lacks scientific support.

The DEIR Has Not Adequately Assessed the Significance of Project Impacts to Special-Status Plant Species

The Project could affect special-status plants and special-status plant habitat during construction of new access roads and turbine pads, road-widening efforts, grading activities, and trenching activities associated with installation of the new underground

↓ L-27

⁴⁸ CDFG. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Available at:

http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html#Plants.

⁴⁹ DEIR, p. 4.4-65.

⁵⁰ DEIR, p. 4.4-67.

⁵¹ CDFG. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Available at:

http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html#Plants.

collection system.⁵² The DEIR fails to assess the significance of these potential impacts. More importantly, the DEIR fails to provide a discussion of the relative significance of potential direct, indirect, and cumulative impacts on each of the 34 special-status plant species that may occur in the Project area. Specifically, as described in the CDFG protocol, the DEIR’s impact assessment must include a discussion of nearby populations and total species distribution for each potentially impacted species and sensitive natural community.⁵³



The DEIR Does Not Provide Adequate Mitigation For Project Impacts to Special-Status Plant Species

According to the DEIR,

“[w]here avoidance is not feasible, the Applicant shall compensate for the loss of special-status plants by hiring a qualified ecologist to develop and implement a restoration and mitigation plan according to CDFG guidelines and in coordination with CDFG and USFWS. At a minimum, the plan shall include collection of reproductive structures from affected plants, a full description of microhabitat conditions necessary for each affected species, seed germination requirements, restoration techniques for temporarily disturbed occurrences, assessments of potential transplant and enhancement sites, a timetable for implementation, success and performance criteria, a monitoring program, and measures to ensure long-term sustainability.”⁵⁴

This is not an effective mitigation measure. First, California Native Plant Society (CNPS) guidance explicitly states losses of plant populations considered "significant" under CEQA cannot be mitigated to less-than-significant levels using *ex situ* conservation techniques (e.g., salvage and relocation).⁵⁵ Second, the DEIR does not identify or discuss any of the variables associated with the mitigation proposal. These include: a) the location of lands for salvage/relocation, and a mechanism for the conservation and management of these lands; b) the success criteria associated with the mitigation program, and triggers for remedial measures if success criteria are not achieved; c) the means for assessing and preventing genetic contamination at the receiving site; and, d) the monitoring that will be conducted to evaluate success of the proposed mitigation. Each of these variables is likely critical to the potential for the proposed mitigation to succeed. Third, the DEIR fails to define what is considered “feasible”, and under what conditions the Applicant will be *required* to avoid impacts to a special-status plant population (e.g., if an extremely rare species is detected on the site). Fourth, the DEIR fails to cite the CDFG guidelines for preparing a special-status plant restoration and mitigation plan (I am unaware that such guidelines exist).

L-28



⁵² DEIR, p. 4.4-65.

⁵³ See p. 7 In: CDFG. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Available at: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html#Plants.

⁵⁴ DEIR, p. 4.4-67.

⁵⁵ California Native Plant Society. 1992. Policy on appropriate application of *ex situ* conservation techniques. Available from: http://www.cnps.org/cnps/archive/ex_situ.pdf

Although salvage and relocation have some merits as a last resort, I reiterate CNPS's position that it cannot be considered an effective means of mitigating impacts. Fiedler (1991) conducted a thorough review of mitigation-related transplantation, relocation and reintroduction attempts involving special-status plants in California.⁵⁶ The author reported only 8 of the 53 (15%) attempts reviewed in her study should be considered fully successful.⁵⁷ Although Fiedler reported several causes for the failed attempts, the common result was that the plants died. Based on my review of the literature, failure of the proposed mitigation is almost guaranteed for many plant species, which to-date have never been transplanted successfully. Before attempting to conclude a restoration plan will reduce significant impacts, the DEIR must first provide evidence that potentially impacted plants can be transplanted and/or propagated successfully.

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L-28

The DEIR's plant mitigation measure requires a qualified ecologist to provide: a) a full description of microhabitat conditions necessary; and b) the seed germination requirements for each affected species. These most likely are not feasible mitigation measures. The biology of most special-status plant species (including microhabitat and germination requirements) is poorly understood, and attaining the requisite knowledge would likely require several years of rigorous study.⁵⁸ Thus, unless there is a thorough understanding of the species-specific techniques required for translocation, relocation, reintroduction, and restoration, these forms of mitigation should not be considered capable of reducing impacts to sensitive botanical resources. As a result, the County must also consider compensatory mitigation as a means to reduce the Project's impacts to special-status species and their habitat.

I have the following additional comments pertaining to the DEIR's proposed mitigation for Project impacts to sensitive botanical resources:

1. Project ground disturbance activities (which may impact sensitive botanical resources) are scheduled to begin in March 2012.⁵⁹ Based on the blooming periods of the special-status plant species that may occur in the Project area, protocol surveys will require site visits during the summer. As a result, supplemental surveys do not appear to be a feasible form of mitigation. Consequently, the DEIR must establish a means for conducting appropriately timed plant surveys and evaluating the results before ground disturbance activities begin.
2. According to the DEIR, "[e]xclusion fencing and/or silt fencing shall be installed around special-status plant populations with as large a buffer as possible."⁶⁰ This mitigation measure is too vague and its likely effectiveness cannot be evaluated. The DEIR needs to establish the minimum buffers that will be installed around special-status plant populations.

L-29
L-30

⁵⁶ Fiedler PL. 1991. Mitigation-related transplantation, relocation and reintroduction projects involving endangered and threatened, and rare plant species in California. Final Report. Available at: nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3173.

⁵⁷ Id.

⁵⁸ Id.

⁵⁹ DEIR, Table 3-7.

⁶⁰ DEIR, p. 4.4-67.

The DEIR Lacks Adequate Mitigation For Project Impacts to Sensitive Natural Communities

The DEIR’s proposed mitigation for Project impacts to Sensitive Natural Communities includes having the Applicant seed disturbed Creeping Rye Grass Turfs and Purple Needlegrass Grassland areas with native Creeping Rye Grass and Purple Needlegrass Grassland seed collected within or in the vicinity of impacts.⁶¹ To meet CEQA requirements, the DEIR must establish minimum, measurable performance standards for the proposed mitigation measure. In addition, it must require a monitoring and reporting program that ensures proper implementation of the mitigation measure. Finally, it must establish contingency plans if the performance standards are not met.

L-31

The Project May Not Comply with ESA and CESA

Several state and federally listed species are known to occur on the Project site.⁶² The Project may result in the take of these species. The DEIR fails to describe any consultations between the Applicant and the CDFG and USFWS regarding incidental take of listed species. Furthermore, it fails to establish a mechanism for ensuring the Project receives incidental take authorization prior to any activities that may cause take.

L-32

The California Endangered Species Act (CESA) requires mitigation that fully offsets impacts to state listed species. The DEIR fails to discuss this standard, or provide any scientific support that justifies the ability of the proposed mitigation to fully mitigate Project impacts to state listed species.

L-33

Habitat Compensation

The DEIR indicates that the Project will require compensatory mitigation. Based on the impacts discussed in the DEIR, compensatory mitigation requirements would be relatively trivial. I understand that the Applicant proposes to compensate for impacts to habitat by retiring existing wind rights held by the Applicant. I further understand that these wind rights occur on lands already covered by conservation easements, and that retiring the wind rights would not offset impacts to terrestrial habitat.

L-34

Although I fully support renewable energy development, renewable energy facilities often cause significant environmental impacts. In some cases these impacts have severe consequences on the future conservation of sensitive biological resources. This may be especially true in areas such as the APWRA, which functions as both a major migratory corridor, and as habitat for large populations of resident birds. It is my professional opinion that turbine-related bird mortality in the APWRA is jeopardizing the conservation of the golden eagle, burrowing owl, and perhaps other sensitive bird species. Furthermore, it is my professional opinion that the conservation benefits that would be gained by retiring wind rights outweigh the benefits that would be gained by

L-35

⁶¹ DEIR, p. 4.4-69.
⁶² DEIR, Table 4.1-1.

acquiring a trivial amount of terrestrial habitat. As a result, I believe the Applicant's proposal has ecological merit and warrants careful consideration.

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L-35

Sincerely,



Scott Cashen, M.S.
Senior Biologist

2.3.12 Letter L – Responses to Comments from Scott Cashen, M.S.

- L-1 The USFWS has a new “take permit” program for bald or golden eagles, applicable when the taking is associated with, but is not the purpose of, an otherwise lawful activity, and when take cannot be practicably avoided. On page 4.4-7, the DEIR discusses the Bald and Golden Eagle Protection Act, and identifies that the take permit program is under development. The program’s interim guidelines are then discussed, and are incorporated into the Impact 4.4-1 (avians) discussion. The EIR evaluates impacts of the Project on golden eagles and other species under CEQA and is not intended to evaluate compliance with other laws. As discussed in the DEIR, the USFWS (not the County) has jurisdiction under the Eagle Act.
- L-2 Minimum inventory and monitoring efforts are recommended by the USFWS in the *Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance* (2010), which include ground surveys and aerial helicopter surveys. These are recommendations and are not presently required under CEQA. However, during reconnaissance surveys of the Project area, golden eagle nesting locations in or near the Project area were documented and mapped (Ecology and Environment, Inc., 2009), as discussed in the DEIR in Appendix D1. Documented golden eagle nesting locations are shown in DEIR Figure 4.4-5 (page 4.4-37). USFWS did not question the adequacy of these reconnaissance surveys in their comment letter on the DEIR (Letter C).
- L-3 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.
- L-4 The USFWS’s Draft Eagle Conservation Plan Guidance is not applicable to CEQA, but rather provides recommendations for the development of Eagle Conservation Plans (ECPs) to support issuance of eagle programmatic take permits for wind facilities. As noted in Response L-1, the program for issuance of eagle programmatic take permits for wind facilities is presently under development. As a permitting agency, USFWS has the ability to implement or require the mitigations the commenter requests. Nonetheless, the DEIR analyzes impacts associated with bird strike in DEIR Section 4.4.6.2. Also see the discussion of Impact 4.4-1 and Mitigation Measures 4.4-1a and 4.4-1b beginning on page 4.4-36 of the DEIR.
- L-5 Mitigation Measure 4.4-1b requiring post-construction monitoring is neither vague nor incomplete. Details about collecting field data on behavior, utilization, and distribution patterns of affected avian species, etc. are sufficiently defined to allow for meaningful evaluation of their effectiveness. See Section 2.2.2, *Master Response on CEQA Issues*, subsection 2.2.2.2, regarding CEQA Focus of Review.

- L-6 Avian mortality estimates are a function of the search area, search frequency, and the site-specific removal rate, and the inclusion of these factors into the process of estimating mortality is discussed in DEIR Appendix D-3. The DEIR establishes a minimum search frequency and duration as part of Mitigation Measure 4.4-1(b), and defines the search area as all turbines plus a 30 percent subset. The DEIR need not further specify the details of the monitoring, such as the search radius and the scavenger removal rate. Upon reviewing the terrain surrounding each turbine, the designing biologist would identify an appropriate search radius. Scavenger removal rates and other scaling factors are somewhat site-specific, and would need to adjust for the surrounding terrain and search radius.
- L-7 The commenter mischaracterizes Mitigation Measure 4.4-1(b)(v). All turbines would be monitored for avian mortality at least once per month, with a subset (30 percent) to receive additional monitoring for a total minimum of twice per month. The County views this as comparable to, and not “considerably less than,” most past avian fatality studies. The required interval is based on the County and the EIR preparer’s evaluation of Project- and site-specific impacts, regardless of whether the conclusion is consistent with conclusions reached under other circumstances.
- L-8 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4 for a discussion on the use of the term “significantly disproportionate” in Mitigation Measure 4.4-1(b)(vii), referring to those fatalities that are unlikely to occur by chance and that therefore indicate a systematic cause. The mitigation measure is part of an adaptive management approach, also discussed in the *Master Response on Biological Resources*, subsection 2.2.3.4, and does not lack enforceability as the commenter asserts. The County has the ability to enforce adaptive management provisions of the EIR based on the criteria of causing significantly disproportionate fatality, and this mitigation measure reserves its right to do so.
- L-9 The County relied on several factors to conclude that repowering is likely to reduce collision mortality for the four focal raptor species, and did not rely solely and *a priori* on preliminary studies from two operational repowering projects in the APWRA. As is noted by the commenter, there is scientific evidence to support the conclusion that repowering and micrositing would significantly reduce avian collision mortality of at least the four focal raptor species. It also should be noted that high-quality data continuing to emerge from the APWRA would continue to inform effective adaptive management strategies. Under the adaptive management principles, the County reserves its right to impose further mitigation if one or more repowered turbines causes significantly disproportionate focal raptor or bat fatalities. In response to the acknowledged uncertainty about the severity of Project impacts to avians and the efficiency of the proposed mitigation measures, the EIR conservatively concludes that the impact related to avian mortality (4.4-1) is significant and unavoidable. Also see Response I-32 and discussions presented in Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4.

- L-10 The settlement agreement among Alameda County and several environmental organizations is not binding in Contra Costa County's jurisdiction and is not directly applicable to the Project or this CEQA review. Therefore, a 50 percent reduction in focal raptor mortality was not specified as the threshold for adaptive management. As the commenter points out, a percentage reduction in fatality may be a relatively meaningless goal unless it is considered in conjunction with population dynamics. The threshold here is based on one or more turbines causing significantly disproportionate fatalities, and the threshold is also subject to the baseline analysis – the amount of fatality caused by the Project relative to baseline fatality, as described in DEIR Section 4.4.3, *Project Baseline*. The use of “significantly disproportionate” is explained in Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.4. This ensures that adaptive management would apply if fatalities caused by the Project were greater than baseline fatalities, and that adaptive management would also apply if overall fatalities were equal to or less than baseline, but one or more turbines was the main cause of those fatalities.

Table 4.4-2 of the DEIR provides the average number of individual birds killed per year and the fatalities per MW per year, based on *Baseline Avian and Bat Fatality Rates at the Tres Vaqueros Wind Project, Contra Costa County, California* (Smallwood, 2010a). Smallwood recommends that both of the estimates be considered the baseline fatality rates for the Project. He explains that an estimate of the total annual fatalities caused by the existing windfarm provides information on the total impact and can contribute to concluding whether repowering reduced the absolute number of fatalities, while fatalities per MW per year provides information on the Project's impacts relative to its capacity. Under each approach, a disproportionate increase in fatality due to repowering would trigger an adaptive management response.

The population dynamics of affected species are largely unknown. However, bird utilization and behavior studies, as well as fatality studies, would be conducted per Mitigation Measure 4.4-1(b), and may contribute to an understanding of the population dynamics of affected species. Study results would be reviewed by the County when determining whether to apply adaptive management. The goal of adaptive management, as stated in Mitigation Measure 4.4-1(b)(vii) is to reduce fatalities by continually incorporating effective mitigation measures that are based on the best available science over the life of the Project. An evaluation of scientific data regarding population dynamics of affected species would be consistent with the goal of incorporating the best available science over the life of the Project.

- L-11 See Section 2.2.3, *Master Response on Biological Resources*, subsections 2.2.3.4 and 2.2.3.5 for a discussion on avians and bats, adaptive management, and revised mitigation. Bat mortality estimates are a function of the search area, search frequency, and the site-specific removal rate, and the inclusion of these factors into the process of estimating mortality is self-evident. The DEIR establishes a minimum search frequency and duration as part of Mitigation Measure 4.4-3, and defines the search area as all turbines plus a 30 percent subset. The DEIR need not further specify the details of the monitoring, such as

- the search radius and the scavenger removal rate. Upon reviewing the terrain surrounding each turbine, the designing biologist can identify an appropriate search radius. Scavenger removal rates and other scaling factors are somewhat site-specific, and would likely need to adjust for the surrounding terrain and search radius. Also see Response I-28 for related information.
- L-12 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.6.
- L-13 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.6.
- L-14 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.6.
- L-15 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.6.
- L-16 Mitigation Measure 4.4-2 is based on the California Burrowing Owl Consortium's current *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC, 1993) that have been adopted as standard mitigation guidance by CDFG. The guidelines do not require long-term monitoring of replacement burrows or documented occupation of artificial burrows by burrowing owls.
- L-17 See Response L-16.
- L-18 Comment noted. The Project would not impact sensitive breeding habitat, therefore the Sensitive Species Relocation Plan would only pertain to post-metamorphic life stages encountered in upland habitat within the construction footprint. Habitat within the construction footprint is the same as habitat outside the construction footprint, as the Project area is relatively homogenous annual grassland. Adults are less sensitive to relocation than other life stages. The Plan would be approved by and implemented in coordination with the USFWS and CDFG.
- L-19 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.7.
- L-20 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.7.
- L-21 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.7.
- L-22 Special-status reptiles would benefit from grassland habitat compensation required under Mitigation Measures 4.4-4 and 4.4-6(b), which provides for mitigation at a minimum 1:1 ratio or a higher ratio if required by USFWS or CDFG. These measures also provide for the management and preservation of lands in perpetuity.
- L-23 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.7.
- L-24 Pre-construction nesting bird surveys would be conducted per CDFG guidance as provided for in Mitigation Measure 4.4-12. Nesting bird survey guidance is not published, but is provided by CDFG regional offices and may vary by region. In this

- region, pre-construction nesting bird surveys are typically conducted no more than 30 days prior to construction. A construction monitor shall also be present at active work sites until initial groundbreaking activities have been completed, per General Biological Resources Mitigation Measure 5, for the protection of biological resources, including nesting birds. It should be noted that with the exceptions of the F1 turbine and the O&M facility locations, few trees are located in the vicinity of proposed construction activity.
- L-25 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- L-26 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- L-27 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- L-28 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- L-29 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- L-30 See Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.9.
- L-31 General Biological Resources Mitigation Measure 2 on page 4.4-31 of the DEIR requires the Applicant to submit for review and approval by the County Zoning Administrator, prior to the issuance of a grading permit or building permit, a plan for reclaimed areas and temporarily-impacted areas describing pre-Project area conditions, restoration, a timetable for implementation, and monitoring success criteria. Regarding performance standards, see Response H-10.
- L-32 See Response L-1 and Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.8. The EIR need not require actions by the Applicant that are already required by statute.
- L-33 See Response L-1 and Section 2.2.3, *Master Response on Biological Resources*, subsection 2.2.3.8. CDFG would not be authorized to issue required permits if the Applicant was unable to meet applicable standards under the Endangered Species Act.
- L-34 Comments are noted.
- L-35 Comments are noted.



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July 14, 2011

William R. Nelson, Senior Planner
Contra Costa County
Department of Conservation & Development
Community Development division
651 Pine Street, 4th Floor – North wing
Martinez, CA 94553

Subject: Tres Vaqueros, LLC Comments on the Tres Vaqueros Windfarm Project Draft
Environmental Impact Report
County File # LP09-2005

Dear Mr. Nelson:

Tres Vaqueros LLC appreciates the opportunity to provide comments on the Draft
Environmental Impact Review (DEIR) for the Tres Vaqueros Windfarm Project. This comment
letter provides general comments on the project.

GENERAL COMMENTS

1. In several sections of Chapter 4 Environmental Setting, Impacts and Mitigation Measures, the EIR asks the Applicant to provide compensation for impacts to special status species habitat at a 1:1 ratio or a higher ratio if required by USFWS or CDFG during the permitting process. We are actively consulting with USFWS and CDFG to establish appropriate mitigation ratios, specific mitigation land options, and habitat quality requirements. We believe that efficient and effective mitigation for impacts to terrestrial species and habitat should tie the mitigation to the impact and keep the mitigation in the Tres Vaqueros "back yard".
2. Permanent impacts associated with the construction of Tres Vaqueros will be offset by project-related restoration activities, which will result in a net increase of upland habitat and overall improvement of habitat quality.
3. The preferred method for compensating for temporary impacts is habitat restoration and improvement within the Marsh Creek Conservation Lands. Also, if additional



compensatory land is required, we advocate perfecting the real estate rights and conservation status of land owners (including East Bay) in the immediate project vicinity, improving habitat quality in the immediate project area, and funding the purchase of appropriate mitigation acreage through the Contra Costa County HCP.



- 4. The Tres Vaqueros Repowering Project (Project) will repower the existing wind energy facility by decommissioning and removing approximately 92 obsolete wind turbines and associated infrastructure (including concrete foundations, transformers, and electrical equipment) and replace them with up to 24 new, larger and more efficient wind turbine generators (WTGs).

M-4



- 5. Repowering is proving to be the most effective method for reducing avian fatality associated with wind energy facilities in the Altamont Pass Wind Resource Area (APWRA). Turbine micro-siting is designed to minimize risks to focal raptor species and will likely further reduce avian fatalities.

M-5



Thank you for evaluating our comments on the DEIR. We look forward to working cooperatively with Contra Costa County, the US Fish & Wildlife Service, and California Fish & Game to devise the highest value mitigation strategy to benefit special status species and their habitat both on the Tres Vaqueros site and its neighboring properties.

Respectfully submitted,


John F. (Rick) Greiner, CPG
Pattern Energy Group

2.3.13 Letter M – Responses to Comments from Pattern Energy (Applicant)

M-1 Comment noted.

M-2 Comment noted.

M-3 Comment noted.

M-4 The commenter is referred to Section 2.2.1, *Master Response on the Environmentally Preferred Alternative*. Under this alternative, the existing wind energy facility would be repowered by decommissioning and removing all 91 existing wind turbines and associated infrastructure, and replacing them with 19 new, larger and more efficient wind turbines. Furthermore, the commenter indicates 92 existing turbines at the existing wind farm. This was an error by the commenter; in fact there are only 91 turbines.

M-5 Comment noted.

TRANSCRIPTION: WEDNESDAY, JULY 6, 2011, 3:30 P.M.
CONTRA COSTA COUNTY ZONING ADMINISTRATOR HEARING
ITEM #6 – TRES VAQUEROS WINDFARMS, LLC
FILE #LP09-2005

PAT ROCHE: This is a hearing to receive comments on the Tres Vaqueros Windfarm Project Draft Environmental Impact Report. As Richard identified, there are green speaker cards for those intending to speak today. Please fill out a green speaker card and submit it at the railing. I've received two speaker cards so far, the first person up would be Jody Bailey from Save Mount Diablo.

JODY BAILEY: Good afternoon. Jody Bailey, Save Mount Diablo, 1901 Olympic Boulevard in Walnut Creek. We don't really have any substantial comments at this point. We are still evaluating the document, but we are working actively with the applicant to try and make a site visit. That's one of the reasons we wanted to wait. We will be submitting more substantial comments next week or whenever the due date, I believe is the 14th. We just wanted to say that we understand there is a tight time frame and these are very substantial and significant projects. We do want to take all the appropriate time possible to fully evaluate the impacts of the project and hope that the County will do the same.

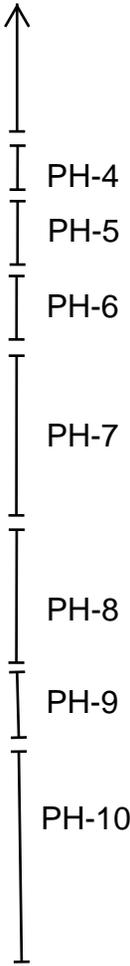
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PAT ROCHE: Thank you. The next speaker is Joe Ciolek with the Agricultural – Natural Resources Trust of Contra Costa County.

JOE CIOLEK: Good afternoon. My name is Joe Ciolek. I reside at 208 Hillside Road in Antioch, CA. I am here representing the Agricultural and Natural Resources Trust of Contra Costa County. We first addressed this body on the Tres Vaqueros Windfarm Repowering Project at the scoping meeting on April 20, 2009. At that time, we informed the Zoning Administrator that we are the party holding the mitigation conservation easement covering 936 acres of the proposed project site. We were then and continue to be concerned that the purpose and the objectives of that mitigation easement are being overlooked in the preparation of the EIR even though the easement has been recorded since February of 2008. We are preparing detailed written comments, but wish to share highlights at this public hearing. The first of those is that the existing mitigation easement which covers roughly one-third of the proposed project footprint is a mitigation requirement under CEQA for the Vineyards of Marsh Creek project and is a condition of approval of that project from the County. Compromising the easement will render it ineffective toward the mitigation measures for which the project was approved. We've been advised by counsel that CEQA requires the easement to be protected. The Draft EIR does not adequately address the habitat preservation purpose and objectives of the existing easement. Therefore, we feel further mitigation measures are required. Discussions with Pattern Energy started following that scoping meeting, but were ended by them without comment following a June 3, 2009, stakeholders meeting that they arranged. Our next contact from Pattern was a phone call on May 3rd of this year asking to discuss the project and our obvious stakeholders position. We met with Mr. Terry Cantorna of Pattern Energy on May 13th. In that meeting we shared our concerns about the impacts to the mitigation easement area and discussed in general

PH-2
PH-3

terms some approaches to mitigation. Response from Pattern since May 13th indicates cooperation and includes a map that overlays the mitigation easement area on top of the proposed project footprint. A copy of that map is being provided at this hearing. Among our major concerns as we review the Draft EIR are the following: the 936 acre mitigation area is specifically referenced only once in the 507 pages of the Draft EIR. Although it makes reference to mitigation for development of an offsite project, specific reference to the Vineyards project and its required mitigation measures is not made. The mitigation easement does not limit the repowering project; however there is nothing in the easement that would permit the project to frustrate mitigation purposes by impacting the resources being protected. Since we assume land management responsibility, our fieldwork has indicated impacts from the existing windfarm project to resources being protected under the easement. Most notably, long-term erosion and its effects on special-status species habitat. We find nothing in the Draft EIR to suggest measures to prevent similar failures in the repowering project, or to correct the ongoing impacts from the initial project. Therefore, we feel that further mitigation measures are required. Mitigation measures for erosion from road work, culverts, maintenance activities and road beds are not adequately addressed. Erosion is a major threat to the fragile habitat in the existing easement area and it will be in any newly protected areas within the project site. Therefore we feel further mitigation measures are required. The Draft EIR does not address the additional expense that the repowering project has caused and will continue to cause the Ag. Trust to incur for long-term stewardship activities. We have retained experts with extensive on-the-ground experience in the project area to assist in developing our written comments for the EIR. Those comments will be timely delivered through our counsel, Martin Lysons of Gagen McCoy, along with recommended mitigation measures for the impacts and the inadequacies we have identified. Our intention in commenting is to protect our legal real estate rights, to meet our stewardship responsibilities, and to follow the mandates of CEQA. We remain ready for further discussion with Pattern Energy and the County on the specifics of our concerns and our ideas. Thank you.



PAT ROCHE: Thank you Mr. Ciolek, and for the record, we have received your written statement and that will be included in the record for today's meeting. I have no other green speaker cards. I don't see anyone rising to speak, so with that, I will close this hearing and just as a reminder, the comment period for this Draft EIR is July the 14th. That's a Thursday. 5:00 P.M. is the time for which we need to have those comments submitted. Thank you, everybody.

RECEIVED

7/6/11

ZONING ADMINISTRATOR

AGENDA ITEM #

Oral Comments for July 7, 2011 Public Hearing

6 Tres Vaqueros Windfarm Repowering Project

Good afternoon.

My name is Joe Ciolek and I represent the Agricultural - Natural Resources Trust of Contra Costa County. We first addressed this body on the Tres Vaqueros Windfarm Repowering Project at the Scoping Meeting on April 20, 2009. At that time, we informed the Zoning Administrator that we hold the mitigation conservation easement covering 936 acres of the proposed Project site. We were and continue to be concerned that the purpose and objectives of the mitigation easement are being overlooked in the preparation of the EIR, even though that easement has been recorded since February, 2008.

We are preparing detailed written comments, but wish to share highlights at this Public Hearing:

- 1. The existing mitigation easement -- covering roughly 1/3 of the proposed Project footprint -- is a mitigation requirement under CEQA for the Vineyards of Marsh Creek Project and a condition of approval by Contra Costa County. Compromising the easement will render ineffective the mitigation measures for the Vineyards Project. We have been advised by counsel that CEQA requires the easement to be protected. The Draft EIR does not adequately address the habitat preservation purpose and objectives of the existing easement. Therefore, further mitigation measures are required.
- 2. Discussions with Pattern Energy started following the Scoping Meeting, but were ended by them without comment following a June 3, 2009 Stakeholders Meeting they arranged. Our next contact from Pattern was a phone call on May 3rd of this year asking to discuss the Project and our obvious Stakeholder position; we met Mr. Terry Cantorna on May 13th. We shared our concerns about the impacts to the mitigation easement area and discussed in general some approaches to mitigation. Response from Pattern since May 13th indicates cooperation and includes a map that overlays the mitigation easement area on top of the Project footprint. A copy of that map is being provided at this hearing.
- 3. Among our major concerns as we review the Draft EIR are the following:
 - a. The 936-acre mitigation area is specifically referenced only once in its 507 pages.
 - b. Although making reference to "mitigation for development of an off-site parcel", specific reference to the Vineyards Project and its required mitigation measures is not made.
 - c. The mitigation easement does not limit the Repowering Project. However; there is nothing in the easement that would permit the Project to frustrate mitigation purposes by impacting the resources being protected.
 - d. Since assuming land management responsibilities, our field work has identified impacts from the existing wind farm project to the resources being protected -- most notably, long-term erosion and its effects on special-status species habitat. We find nothing in the Draft EIR to suggest measures to prevent similar failures in the Repowering Project, nor to correct the ongoing impacts from the initial project. Therefore, further mitigation measures are required.
 - e. Mitigation measures for erosion from road-work, culverts, maintenance activities, and road-beds are not adequately addressed. Erosion is a major threat to fragile habitat in the existing easement area, as it will be in any newly protected areas within the Project site. Therefore, further mitigation measures are required.

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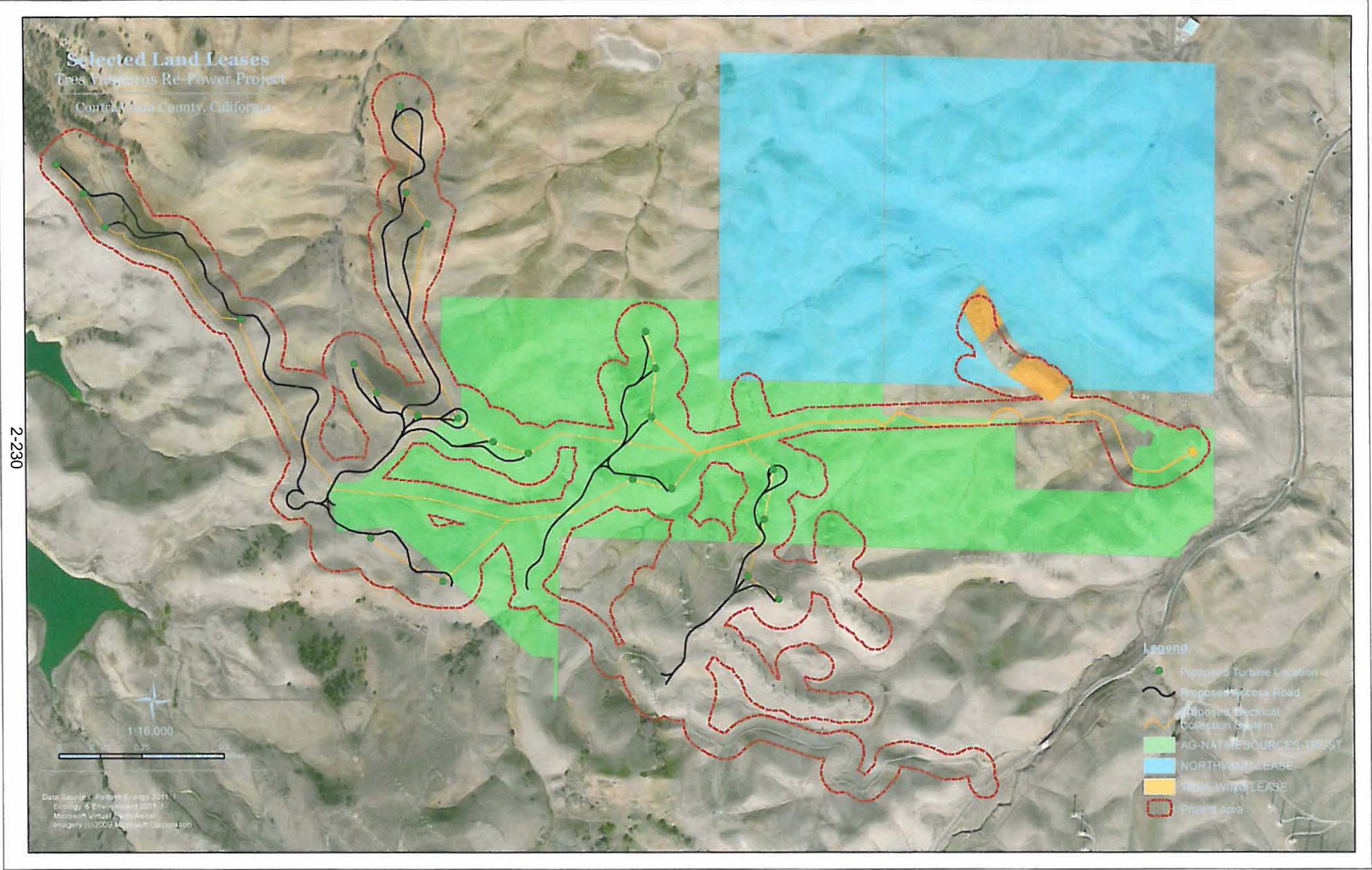
- f. The Draft EIR does not address the additional expense that the Repowering Project has caused and will continue to cause ANRT to incur for long-term stewardship activities.

PH-18

We have retained experts with extensive on-the-ground experience in the Project area to assist in developing written comments to the EIR. Those written comments will be timely delivered by our Counsel, Martin Lysons of Gagen McCoy, along with recommended mitigation measures for the impacts and inadequacies we have identified.

Our intention in commenting is to protect our legitimate real estate rights, meet our stewardship responsibilities and follow the mandates of CEQA. We remain ready to further discussions with Pattern Energy and the County on the specifics of our concerns and ideas.

Thank you.



2.3.14 PH – Responses to Comments from Public Hearing

- PH-1 The commenter indicated that they did not have any substantial comments at the time of the public hearing. Comment noted. Following the public hearing the commenter later submitted a full comment letter on the DEIR to the County. The commenter's concerns expressed in their letter are addressed in Responses H-1 through H-36.
- PH-2 The commenter's concerns were are addressed in Responses G-1 through G-48 in response to their subsequently submitted letter to the County on the DEIR.
- PH-3 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.
- PH-4 Comment noted.
- PH-5 Comment noted.
- PH-6 Comment noted.
- PH-7 See Response G-12.
- PH-8 The commenter's concerns were are addressed in Responses G-1 through G-48 in response to their subsequently submitted letter to the County on the DEIR.
- PH-9 See Responses G-46 and G-47.
- PH-10 The commenter's concerns were are addressed in Responses G-1 through G-48 in response to their subsequently submitted letter to the County on the DEIR.
- PH-11 The commenter's concerns were are addressed in Responses G-1 through G-48 in response to their subsequently submitted letter to the County on the DEIR.
- PH-12 This comment does not address any concern or issue specifically related to the adequacy of the DEIR. This comment is noted.
- PH-13 Comment noted.
- PH-14 Comment noted.
- PH-15 The commenter's concerns were are addressed in Responses G-1 through G-48 in response to their subsequently submitted letter to the County on the DEIR.
- PH-16 The commenter's concerns were are addressed in Responses G-1 through G-48 in response to their subsequently submitted letter to the County on the DEIR.
- PH-17 The commenter's concerns were are addressed in Responses G-1 through G-48 in response to their subsequently submitted letter to the County on the DEIR.
- PH-18 See Responses G-46 and G-47.

CHAPTER 3

EIR Text Revisions

3.1 Introduction

The following changes have been made to the previously published text of the DEIR. These changes include: minor corrections made by the section authors to improve writing clarity, grammar, and consistency; clarifications, additions, or deletions resulting from specific responses to comments; and County staff-initiated text changes to update information in the DEIR. These text revisions are organized by the chapter and page number that appear in the DEIR. An explanation of the change, including identification of where it would be made, is presented in *italics*. The specific additions and deletions use the following conventions:

- Text deleted from the EIR is shown in ~~strike-out text~~.
- Text added to the EIR is shown in underline text.

3.2 Text Revisions

3.2.1 Executive Summary

The following bullet has been added to Section ES-7 of the DEIR Executive Summary, page ES-7:

- Impacts related to hydrology, including erosion within the watershed; ~~and~~
- Access and site security for adjacent properties; and;
- Impacts to cultural resources located within the Project area, including Vasco Caves.

3.2.2 Chapter 1, Introduction

In response to this comment, text found on page 1-2 of the DEIR is revised as follows:

Other agencies that may rely on this EIR when considering approvals for the Project include the State Water Resources Control Board, California Department of Fish and Game, ~~and Alameda County,~~ and East Bay Regional Park District.

3.2.3 Chapter 2, Summary of Environmental Impacts

DEIR Table 2-1, page 2-2, is revised as shown on the following pages.

**TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT**

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Aesthetics			
<p>Impact 4.1-1: Construction of the Project, decommissioning of the existing turbines, and the process of decommissioning the Project at the end of its life, would have a substantial adverse effect on views from Vasco Caves Regional Preserve.</p>	<p>Less than Significant with Mitigation</p>	<p>Mitigation Measure 4.1-1a: The Applicant shall not place equipment or materials in laydown areas visible from Vasco Caves tours any sooner than two weeks prior to their required use.</p> <p>Mitigation Measure 4.1-1b: All laydown areas visible from the Vasco Caves tour route shall be visually screened using 12-foot tall temporary fencing. Fencing shall incorporate aesthetic treatment through use of appropriate, non-reflective materials, such as chain link fence with light brown or green vinyl slats. The Applicant shall submit final construction plans demonstrating compliance with this measure to the County Zoning Administrator for review and approval at least 30 days prior to issuance of grading permits or building permits.</p> <p>Alternatively, the Applicant may coordinate with the East Bay Regional Park District to schedule construction of those turbines whose laydown areas would be visible from the Vasco Caves tour route during times when tours would not be conducted.</p>	<p>Less than Significant</p>
<p>Impact 4.1-2: Operation and maintenance of the Project would have a substantial adverse effect on scenic vistas.</p>	<p>Significant and Unavoidable</p>	<p>Mitigation Measure 4.1-2: All turbines shall be painted light gray and treated with a non-reflective finish. The Applicant shall submit proposed color finishes with final construction plans demonstrating compliance with this measure to the County Zoning Administrator for review and approval at least 30 days prior to issuance of building permits.</p> <p style="padding-left: 20px;">Los Vaqueros Watershed: Vista Grande Trail</p> <p style="padding-left: 20px;">Los Vaqueros Watershed: Los Vaqueros Shoreline Trail</p> <p style="padding-left: 20px;">Los Vaqueros Watershed: Marina</p> <p style="padding-left: 20px;">Los Vaqueros Watershed: Los Vaqueros Reservoir Office</p> <p style="padding-left: 20px;">Los Vaqueros Watershed: Los Vaqueros Interpretive Center</p> <p style="padding-left: 20px;">Vasco Caves Regional Preserve: None required.</p> <p style="padding-left: 20px;">Morgan Territory Regional Preserve</p> <p style="padding-left: 20px;">Round Valley Regional Preserve: None required.</p>	<p>Significant and Unavoidable</p>
<p>Impact 4.1-3: Operation and maintenance of the Project would adversely impact views of designated scenic ridges.</p>	<p>Less than Significant</p>	<p>None required.</p>	
<p>Impact 4.1-4: The Project would not substantially damage scenic resources within a state- or County-designated scenic highway or route.</p>	<p>Less than Significant</p>	<p>None required.</p>	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Aesthetics (cont.)			
Impact 4.1-5: The Project would alter, but not substantially degrade the existing visual character or quality of the Project area.	Less than Significant	None required.	
Impact 4.1-6: Night lighting required during construction could adversely affect nighttime views in the Project area.	Less than Significant	None required.	
Impact 4.1-7: The Project would create new sources of light that would affect nighttime views in the area.	Less than Significant	None required.	
Impact 4.1-8: During normal operation, the moving shadow of the turbine blades could create visual flicker and a related strobe-like phenomenon that could be a nuisance to nearby residents and/or create a visual hazard for Vasco Road motorists.	Less than Significant	None required.	
Agriculture and Forestry Resources			
Because implementation of the Project would result in no impact to agriculture and forestry resources, there are no impacts and no mitigation measures to be analyzed in this section.			
Air Quality			
Impact 4.3-1: The Project would not conflict with or obstruct implementation of the applicable air quality plan.	Less than Significant	None required.	
Impact 4.3-2: The Project would result in short-term construction emissions of criteria pollutants that would contribute to existing air quality violations.	Significant and Unavoidable	<p>Mitigation Measure 4.3-2a: The Applicant shall reduce construction-related air pollutant emissions by implementing applicable BAAQMD basic control measures. The Applicant shall require all contractors to comply with the following requirements for all areas with active construction activities:</p> <ul style="list-style-type: none"> • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day or at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered; 	Implementation of Mitigation Measures 4.3-2a and 4.3-2b would ensure that dust-related impacts would be less than significant. By contrast, although it is estimated that implementation of Mitigation Measures 4.3-2a and 4.3-2b would reduce total NO _x exhaust emissions identified in

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Air Quality (cont.)			
Impact 4.3-2 (cont.)		<ul style="list-style-type: none"> • All vehicle speeds on unpaved roads shall be limited to 15 mph; • All roadways and driveways to be paved shall be completed as soon as possible. Foundation pads shall be laid as soon as possible after grading unless seeding or soil binders are used; • All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation; • Post a publically visible sign with the Applicant’s telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD’s phone number shall also be visible to ensure compliance with applicable regulations. <p>Mitigation Measure 4.3-2b: The Applicant shall reduce construction-related air pollutant emissions by implementing measures based on BAAQMD’s additional construction mitigation measures. The Applicant shall require all contractors to comply with the following requirements for all areas with active construction activities:</p> <ul style="list-style-type: none"> • All excavation, grading, and/or demolition activities shall be suspended when average ground level wind speeds exceed 20 miles per hour. • Wind breaks (e.g., fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have a maximum 50 percent air porosity. • Vegetative ground cover shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. The seed mix and plant varieties must be approved by the County Zoning Administrator prior to planting. • A wash-off station shall be established at each Project exit point. All trucks and equipment, including their tires, shall be washed off prior to leaving the site. • Site accesses to a distance of 100 feet from the paved road shall be treated with a six to 12 inch compacted layer of wood chips, mulch, or gravel. • Consistent with the approved Storm Water Pollution Prevention Plan, sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent. • The idling time of diesel-powered construction equipment shall be limited to two minutes. • For off-road construction equipment of more than 50 horsepower and all on-road heavy-duty trucks, the Applicant shall ensure achievement of a Project-wide fleet-average 20 percent NOx reduction compared to the most recent CARB fleet average. A plan to achieve these reductions shall be submitted to Contra Costa County for review and approval prior to commencement of construction activities. Construction activities cannot commence until the plan has been approved. Acceptable options for reducing emissions include the use of late 	Table 4.3-3 by approximately 20 percent, this emission reductions would not reduce Project exhaust emissions of NO _x to below the significance level. Consequently, this impact would remain significant and unavoidable with regard to NO _x emissions.

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Air Quality (cont.)			
Impact 4.3-2 (cont.)		model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as such become available.	
Impact 4.3-3: The Project would result in long-term emissions of criteria pollutants.	Less than Significant	None required.	
Biological Resources			
<p><i>The following are general biological resources mitigation measures that would reduce Project impacts and benefit multiple species. They are consolidated here to eliminate redundancy. Measures are presented generally in the order in which they would occur, from pre-construction through end-of-life decommissioning.</i></p>		<p>Mitigation Measure 4.4 – General. The Applicant shall implement the following in order to reduce potential impacts to various species and their habitats:</p> <ol style="list-style-type: none"> 1. Prior to issuance of a grading permits or building permit, the Applicant shall submit a final site plan for review and approval by the County Zoning Administrator. The site plan shall indicate the final locations of all Project components, including but not limited to wind turbines; temporary and permanent roads; electrical collection lines; substation upgrades; drainage and hydrological improvement; and staging and laydown areas, and shall indicate any tree proposed for removal along with its species and diameter. <p>[This general biological resources mitigation measure addresses Impact 4.4-2, Burrowing Owl; Impact 4.4-4, California Red-legged Frog and California Tiger Salamander; Impact 4.4-5, Alameda Whipsnake, Western Pond Turtle, and San Joaquin Coachwhip; Impact 4.4-6, San Joaquin Kit Fox; Impact 4.4-7 American Badger and San Joaquin Pocket Mouse; Impact 4.4-9, Special-status Plants; Impact 4.4-10, Sensitive Natural Communities; Impact 4.4-11, Wetlands; Impact 4.4-12, Breeding Birds; and Impact 4.4-14 Protected Trees by clearly delineating the construction area and identifying areas where pre-construction surveys shall be conducted.]</p> 2. Prior to issuance of a grading permit or building permit, the Applicant shall submit for review and approval by the County Zoning Administrator, a plan for reclaimed areas and temporarily-impacted areas describing pre-Project site conditions, restoration, a timetable for implementation, and monitoring-success criteria. <p>[This general biological resources mitigation measure addresses Impact 4.4-4, California Red-legged Frog and California Tiger Salamander and Impact 4.4-6, San Joaquin Kit Fox by detailing plans for grassland restoration and post-construction monitoring.]</p> 3. Prior to issuance of a grading permit or building permit, the Applicant shall submit for review and approval by the County Zoning Administrator and the County Public Works Department, a stormwater pollution prevention plan (SWPPP) and water pollution control plan as described in Section 4.10, <i>Hydrology and Water Quality</i>, to allow prompt and effective response to accidental spills. <p>[This general biological resources mitigation measure addresses Impact 4.4-4, California Red-legged Frog and California Tiger Salamander; and Impact 4.4-11, Wetlands by protecting water bodies and aquatic species habitat.]</p> 	

**TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT**

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
		<p>4. No more than 30 days prior to commencing construction, which includes groundbreaking activities as well as establishing staging and laydown areas and the arrival of construction equipment and materials, additional pre-construction surveys shall be performed in the Project area for special-status plants and sensitive wildlife species as identified in the mitigation measures below.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-2, Burrowing Owl; Impact 4.4-6, San Joaquin Kit Fox; Impact 4.4-7 American Badger and San Joaquin Pocket Mouse; and Impact 4.4-12, Breeding Birds by requiring pre-construction identification of on-site species.]</p>	
		<p>5. Prior to commencing construction, exclusion and/or silt fencing shall be installed to clearly demarcate all areas within the construction area that have been identified for avoidance by the County- and USFWS-approved biologist. A County- and USFWS-approved biologist shall be present at the active work sites until initial groundbreaking activities have been completed. Thereafter, the County, in consultation with the Applicant, shall approve one or more persons to monitor on-site compliance with all mitigation measures. The Applicant shall ensure, and demonstrate to the satisfaction of the County Zoning Administrator, that the designated monitor(s) receives training consistent with USFWS requirements.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-2, Burrowing Owl; Impact 4.4-6, San Joaquin Kit Fox; Impact 4.4-7 American Badger and San Joaquin Pocket Mouse; Impact 4.4-9, Special-status Plants; Impact 4.4-10, Sensitive Natural Communities; Impact 4.4-11, Wetlands, and Impact 4.4-12, Breeding Birds by ensuring avoidance of protected resources.]</p>	
		<p>6. The Applicant shall ensure that habitat disturbances and all Project activities are restricted to the work area identified in the final site plan approved by the County Zoning Administrator.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-2, Burrowing Owl; Impact 4.4-4, California Red-legged Frog and California Tiger Salamander; Impact 4.4-5, Alameda Whipsnake, Western Pond Turtle, and San Joaquin Coachwhip; Impact 4.4-6, San Joaquin Kit Fox; Impact 4.4-7 American Badger and San Joaquin Pocket Mouse; Impact 4.4-9, Special-status Plants; Impact 4.4-10, Sensitive Natural Communities; Impact 4.4-11, Wetlands; and Impact 4.4-12, Breeding Birds by limiting the areas of direct and indirect impacts.]</p>	
		<p>7. Construction personnel shall be restricted to the immediate construction area and shall not venture beyond the work area identified in the approved final site plan.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-2, Burrowing Owl; Impact 4.4-4, California Red-legged Frog and California Tiger Salamander; Impact 4.4-5, Alameda Whipsnake, Western Pond Turtle, and San Joaquin Coachwhip; Impact 4.4-6, San Joaquin Kit Fox; Impact 4.4-7 American Badger and San Joaquin Pocket Mouse; Impact 4.4-9, Special-status Plants; Impact 4.4-10, Sensitive Natural Communities; Impact 4.4-11, Wetlands; and Impact 4.4-12, Breeding Birds by limiting the areas of direct impacts.]</p>	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
		<p>8. All construction personnel shall receive training from a County- and USFWS-approved biologist addressing sensitive vegetation communities and special-status plant and wildlife species. At a minimum, the training shall include species descriptions and identification, identification of their habitat, the importance of these species and their habitat, the measures being implemented to conserve the species as they relate to the Project, and the boundaries within which Project activities can occur.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-2, Burrowing Owl; Impact 4.4-4, California Red-legged Frog and California Tiger Salamander; Impact 4.4-5, Alameda Whipsnake, Western Pond Turtle, and San Joaquin Coachwhip; Impact 4.4-6, San Joaquin Kit Fox; Impact 4.4-7 American Badger and San Joaquin Pocket Mouse; Impact 4.4-9, Special-status Plants; Impact 4.4-10, Sensitive Natural Communities; Impact 4.4-11, Wetlands; Impact 4.4-12, Breeding Birds; and Impact 4.4-14 Protected Trees by alerting construction personnel to the presence of biological resources and explaining what they can do to protect them.]</p>	
		<p>9. Environmental monitoring shall be part of Project activities, and shall include daily inspection of contractor-compliance with Best Management Practices and mitigation measures. Monitoring shall also include weekly inspection of exclusion and silt fences.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-2, Burrowing Owl; Impact 4.4-4, California Red-legged Frog and California Tiger Salamander; Impact 4.4-5, Alameda Whipsnake, Western Pond Turtle, and San Joaquin Coachwhip; Impact 4.4-6, San Joaquin Kit Fox; Impact 4.4-7 American Badger and San Joaquin Pocket Mouse; Impact 4.4-9, Special-status Plants; Impact 4.4-10, Sensitive Natural Communities; Impact 4.4-11, Wetlands; Impact 4.4-12, Breeding Birds; and Impact 4.4-14 Protected Trees by providing third-party oversight.]</p>	
		<p>10. Each morning before the start of Project activities, after breaks, and anytime construction equipment has remained in one location for more than 15 minutes, construction personnel shall check for species beneath tires and underneath equipment before its operation. If any wildlife are observed, the equipment shall remain stationary until either the animal has relocated (without harassment) or the arrival of the approved biological monitor, who will identify the species and determine whether the species can be actively or passively relocated, or whether construction activities must remain halted.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-4, California Red-legged Frog and California Tiger Salamander and Impact 4.4-5, Alameda Whipsnake, Western Pond Turtle, and San Joaquin Coachwhip by protecting reptiles and amphibians that commonly seek shelter and/or shade underneath construction vehicles and that could get crushed during their operation.]</p>	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
		<p>11. To prevent accidental entrapment of animals during construction, all excavated holes or trenches greater than one foot deep shall be covered at the end of each work day with suitable materials, such as plywood or sheet metal, or shall be adequately fenced, or contain escape routes constructed of earthen materials or wooden planks. Before work occurs in or around these holes or trenches, and before filling, such areas shall be thoroughly inspected for trapped animals.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-4, California Red-legged Frog and California Tiger Salamander; Impact 4.4-5, Alameda Whipsnake, Western Pond Turtle, and San Joaquin Coachwhip; Impact 4.4-6, San Joaquin Kit Fox and Impact 4.4-7 American Badger and San Joaquin Pocket Mouse by protecting animals that seek shelter in excavations or are at risk of falling into excavations.]</p>	
		<p>12. To prevent harassment and mortality of species, and to prevent transmission of diseases, no pets shall be allowed in the Project area.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-2, Burrowing Owl and Impact 4.4-6, San Joaquin Kit Fox by prohibiting pets that could harass, injure, kill, or transfer diseases to on-site wildlife.]</p>	
		<p>13. To avoid attracting predators during Project construction activities, all food-related trash shall be properly contained and, at the end of each construction day, the contractor shall remove all food trash from work areas or place the items in an enclosed bin or dumpster. The bin or dumpster shall be emptied and the contents hauled off-site to an approved waste facility at a minimum weekly. No food related trash shall be allowed to overtop the bin or dumpster.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-6, San Joaquin Kit Fox by preventing accumulation of trash that is attractive to kit fox and their predators, the coyote and red fox.]</p>	
		<p>14. All fueling and maintenance of Project-related vehicles and other equipment shall occur at designated staging areas located at least 75 lateral feet from any riparian habitat or water body.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-4, California Red-legged Frog and California Tiger Salamander; and Impact 4.4-11, Wetlands by protecting water bodies and aquatic species habitat.]</p>	
		<p>15. All Project-related vehicles shall observe a maximum 20 miles per hour speed limit on private roads within the Project area. Nighttime vehicle traffic shall observe a maximum 15 miles per hour speed limit. Off-road traffic outside the designated construction areas is prohibited.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-2, Burrowing Owl; Impact 4.4-4, California Red-legged Frog and California Tiger Salamander; Impact 4.4-5, Alameda Whipsnake, Western Pond Turtle, and San Joaquin Coachwhip; Impact 4.4-6,</p>	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
<p>Impact 4.4-1: Project construction, operation, and maintenance would result in short-term and permanent direct and indirect impacts on birds, including species listed under FESA and CESA, eagles protected under the BGEPA, Fully Protected species, State Species of Special Concern, and birds protected under the MBTA.</p>	<p>Significant and Unavoidable</p>	<p>San Joaquin Kit Fox; Impact 4.4-7 American Badger and San Joaquin Pocket Mouse; and Impact 4.4-13, Common Wildlife Species by implementing slow traffic speeds, minimizing night-time traffic when many wildlife species are active, and prohibiting off-road traffic.]</p> <p>16. After construction had been completed, the Applicant shall restore the topographic contours of all areas temporarily disturbed by the Project and hydroseed them with an appropriate assemblage of native vegetation suitable to the area as determined by the County.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-4, California Red-legged Frog and California Tiger Salamander and Impact 4.4-6, San Joaquin Kit Fox by requiring grassland restoration that will restore ecosystem functionality.]</p> <p>17. Fill material gathered on-site must be incidental fill resulting from other approved Project activities. If for any reason there is a deficiency in required fill material, then the necessary material shall be imported from off-site. No on-site area shall be excavated solely for the purpose of providing fill material. If gathered from on-site, this extra fill material must be collected incidental to other described and permitted Project activities.</p> <p>[This general biological resources mitigation measure addresses Impact 4.4-2, Burrowing Owl; Impact 4.4-4, California Red-legged Frog and California Tiger Salamander; Impact 4.4-5, Alameda Whipsnake, Western Pond Turtle, and San Joaquin Coachwhip; Impact 4.4-6, San Joaquin Kit Fox; Impact 4.4-7 American Badger and San Joaquin Pocket Mouse; and Impact 4.4-12, Breeding Birds by limiting areas of grassland habitat disturbance.¹]</p> <p>Mitigation Measure 4.4-1a: The following mitigation measures shall be implemented during Project design, construction, and operation to reduce avian mortality:</p> <ol style="list-style-type: none"> i. Gravel shall be placed at least 5 feet around each tower foundation to discourage small mammals from burrowing near turbine bases. ii. Boulders (rocks measuring larger than 12 inches in diameter) excavated during Project construction shall be relocated greater than 500 feet from turbines. These boulders may be used in a functional manner at other locales in the Project area, such as below road culverts to diffuse runoff, provided that rock piles are not created within 656 feet (200 meters) of a turbine. iii. Turbine towers shall have internal ladders; external ladders are prohibited in order to eliminate possible perches for birds. iv. Turbines that must be lighted for compliance with Federal Aviation Administration regulations shall use white strobe lights, which are not as attractive to night-migrating birds, unless otherwise required by FAA regulations. 	<p>Significant and Unavoidable</p>

¹ Habitat disturbance impacts may be temporary or permanent. The USFWS typically considers habitat disturbance impacts to be permanent if they last longer than one growing season.

**TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT**

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.4-1 (cont.)		<ul style="list-style-type: none"> v. Electric distribution poles or towers being modified or integrated with the Project shall be compliant with measures defined by the Avian Power Line Interaction Committee (APLIC). vi. The Applicant shall not direct or participate in rodent control programs in the Project area and shall not use rodenticides within the Project area. <p>Mitigation Measure 4.4-1b: The Applicant shall implement a post-construction avian monitoring program as follows:</p> <ul style="list-style-type: none"> i. The post-construction monitoring program shall use red-tailed hawks, golden eagles, American kestrels and burrowing owls (the “Focal Raptor Species”) and bats as benchmarks for evaluating the effectiveness of the overall Project repowering in reducing turbine-related mortality and informing and updating future siting analyses. The post-construction monitoring program shall commence no later than 3 months after the commercial operation date of the Project. ii. The post-construction monitoring program shall be 3 years in duration. Following the 3 years of post-construction monitoring, 2 years of further monitoring shall commence on the 10th anniversary of the Project’s commercial operation date. The initial 3-year monitoring period and the subsequent 2-year monitoring period together shall constitute the post-construction monitoring period. <u>At the County Zoning Administrator’s discretion, the initial 3-year monitoring period can be extended by administrative action to 5 years.</u> iii. The monitoring program shall be conducted by a qualified consultant (“Monitor”) approved by Contra Costa County. iv. Post-construction monitoring shall include collecting field data on behavior, utilization and distribution patterns of affected avian species in addition to fatalities and shall report data in aggregated and by-turbine by-month formats. v. The program shall monitor <u>for fatalities and conduct bird utilization and behavior studies</u> at each repowered turbine at least once per month for the duration of the post-construction monitoring period for fatalities of the Focal Raptor Species and all other bird species, as recommended by the Contra Costa County Technical Advisory Committee (TAC) or an equivalent entity, which will be convened by the County for this purpose. The Applicant shall monitor a subset (30 percent) of the repowered turbines at least twice per month for the duration of the post-construction monitoring period for fatalities and bird utilization and behavior. vi. The Monitor shall prepare interim, annual monitoring reports and submit them to Contra Costa County and the Altamont Pass Wind Resource Area Scientific Review Committee (APWRA SRC) within 3 months of completing each year of post-construction monitoring, and shall prepare and submit a final 3-year Monitoring Report within 6 months of completing 3 years of post-construction monitoring and a final 2-year Monitoring Report within 6 months of completing 2 years of post-construction monitoring. All monitoring reports shall report adjusted and unadjusted annual fatalities for the Focal Raptor Species and all other bird species on a per-turbine and per-megawatt basis. Monitoring reports also shall summarize the results of the bird behavior and use studies for the preceding 1 to 3 years, as applicable. 	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.4-1 (cont.)		<p>vii. Adaptive Management Plan: Contra Costa County will review the final three (3) year Monitoring Report for the Project to evaluate whether any repowered turbines are causing significantly disproportionate Focal Raptor and/or bat fatalities relative to other turbines. If one or more turbines are causing significantly disproportionate Focal Raptor or bat fatalities, then Contra Costa County may, in consultation with the TAC, consider additional focused monitoring and/or management measures designed to reduce the fatalities attributable to those turbines, with the least impact on wind energy production, by continually incorporating effective mitigation measures that are based on the best available science over the life of the Project. Binding instruments of this Plan could include:</p> <ul style="list-style-type: none"> a. Specific percentage-goal reductions in avian mortality or type-specific avian mortality, such as a reduction in overall raptor mortality or species-specific raptor mortality achieved within a specified time period. The percentage-goal reductions will be measured from site-specific baseline fatalities presented in Table 4.4-2 (Smallwood, 2010a). b. Seasonal or weather condition-specific shutdowns of individual turbines identified by data included in the annual monitoring reports required by Mitigation Measure 4.4-1b.ii if, in the best professional judgment of the biologist approved by the County, annual fatality monitoring data identifies the need (e.g., 50 percent more raptor kills than other turbines), and identifies that it cannot be effectively met in any other fashion. c. Extension of the 3-year monitoring period in up to 3-year increments. d. Binding instruments of this Plan shall not include relocation or permanent shutdown of any repowered turbine. 	
Impact 4.4-2: Project construction would result in direct and indirect impacts on burrowing owls, including temporary and permanent loss of potential habitat.	Less than Significant with Mitigation	<p>Mitigation Measure 4.4-2: The Applicant shall implement the measures listed below within grassland habitats to reduce potential impacts to and avoid incidental take of burrowing owls during construction. These measures shall apply to all construction activities within the project footprint and within a 150-meter (approximately 500 foot) buffer, to avoid, minimize, or mitigate impacts on burrowing owls. The Applicant shall follow current CDFG burrowing owl survey guidance, which is presently the Burrowing Owl Consortium multi-phase approach, to evaluate burrowing owl use (CBOC, 1993).</p> <ul style="list-style-type: none"> i. Pre-construction surveys shall be performed to assess burrowing owl presence as close as possible to the date that ground-disturbing activities will begin, generally within 7 days, but no more than 30 days before disturbance will occur. <ul style="list-style-type: none"> a. Additional surveys may be required by CDFG when the initial disturbance is followed by periods of inactivity that could allow owl colonization (e.g., 30 days or longer during the breeding season) or the development is phased spatially and/or temporally over the Project area. Four or more survey visits performed on separate days may be required to assure with a high degree of certainty that site modifications, such as grading, do not take owls. b. A follow-up report shall be provided to CDFG by the surveying biologist. 	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.4-2 (cont.)		<p>ii. <u>In accordance with Mitigation Measure 4.4-7, the Project construction area will be reduced to the smallest possible area. In accordance with General Biological Resources Mitigation Measure 6, the Applicant shall ensure that habitat disturbances and all Project activities are restricted to the work area identified in the final site plan approved by the County Zoning Administrator. In accordance with General Biological Resources Mitigation Measure 7, construction personnel shall be restricted to the immediate construction area and shall not venture beyond the work area identified in the approved final site plan. The work area boundary shall be Construction exclusion areas (e.g., marked with orange exclusion fence or silt fence and signage) shall be established around occupied burrows, where a No disturbance shall be allowed around occupied burrows except as specified below. During the non-breeding season (September 1 through January 31), exclusion areas shall extend at least 160 feet (approximately 50 meters) around occupied burrows. During the breeding season (February 1 through August 31), exclusion areas shall extend at least 250 feet (approximately 75 meters) around occupied burrows.</u></p> <p>a. During the breeding season (February 1 through August 31), <u>no-disturbance areas shall extend at least 250 feet (approximately 75 meters) around occupied burrows. If construction areas conflict with occupied burrows, occupied burrows shall not be disturbed unless a qualified, County- and CDFG-approved biologist verifies through non-invasive methods that either the birds have not begun egg-laying and incubation, or that juveniles from the occupied burrows are foraging independently and are capable of independent survival.</u></p> <p>b. During the non-breeding season (September 1 through January 31), <u>no-disturbance areas shall extend at least 160 feet (approximately 50 meters) around occupied burrows. If construction work areas conflict with occupied burrows in construction exclusion areas, passive relocation techniques could be used with CDFG approval. The approach to owl relocation and burrow closure will vary depending on the number of whether occupied burrows occur within proposed construction areas or outside construction areas but within 160 feet.</u> Passive relocation shall be accomplished, consistent with CDFG guidance (CDFG, 1995), by:</p> <ol style="list-style-type: none"> 1. Enhancing existing unsuitable burrows (e.g., by enlarging or clearing them of debris) or creating new burrows (i.e., by installing artificial burrows) outside the 160-foot buffer zone. The alternate burrows shall be monitored daily for 7 days to confirm whether the owls have moved in and acclimated to the new burrow. 2. Installing one-way doors on the entrances of burrows within 160 feet of the work site. The one-way doors shall be left in place for at least 48 hours to ensure owls have left the burrow and the area shall be monitored daily for one week to confirm owl use of the replacement burrows before formerly-occupied burrows may be excavated. <u>Burrows outside of the Project footprint (i.e., the active construction area) but within</u> 	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.4-2 (cont.)		<p><u>260 feet will be covered, rather than excavated, when a burrow can be effectively covered so there is no risk of subsequent occupation by a burrowing owl during construction; covers shall be removed when construction is completed. If excavation is necessary, Burrows shall be excavated with a qualified biologist present.</u></p> <p>c. Unoccupied burrowing owl burrows within the construction exclusion area <u>Project footprint (i.e., the active construction area)</u>, shall be excavated with a qualified biologist present, and then filled to prevent reoccupation. If any burrowing owls are discovered during the excavation, the excavation shall cease and the owl shall be allowed to escape. Excavation could be completed when the biological monitor confirms the burrow is empty.</p>	
Impact 4.4-3: Project operation would result in direct impacts on special-status and common bats.	Significant and Unavoidable	<p>Mitigation Measure 4.4-3: The Applicant shall implement the following measures, which are based upon the California Bat Working Group <i>Guidelines for Assessing and Minimizing Impacts to Bats at Wind Energy Development Sites in California</i> (CBWG, 2006). These measures shall help to mitigate the Project's effects on bats by addressing the data gaps that prevent adequate assessment of the Project's effects on bats, such as what bat species are using the APWRA and how they are using the Project area.</p> <p>i. Pre-construction surveys shall be performed in the Project area. Bat investigations shall be conducted in the Project area by a qualified biologist to identify species that may be present in the immediate Project vicinity and in the existing and proposed rotor-swept zones, and to identify any maternal roosts. The qualified biologist shall be experienced in bat research and detection methods, and could employ such methods as acoustic surveys, use of image intensifiers and/or thermal imaging, and radar.</p> <p>ii. Post-construction bat monitoring shall be conducted in the Project area and reported in accordance with the same terms and conditions as provided in Mitigation Measure 4.4-1b, but for bats, and with the following measures:</p> <p>a. Post-construction monitoring shall utilize long-term acoustic monitoring equipment. The Applicant shall install and maintain, in working order, acoustic monitoring equipment for the duration of the survey period.</p> <p>b. Post-construction fatality surveys shall be conducted throughout the Project area as directed by a qualified biologist. These surveys may be seasonal, or dependent upon an initial intense survey, as directed by the designing biologist.</p> <p>iii. The Applicant shall prepare and implement the same Adaptive Management Plan principles for bats that are being applied to avian species under Mitigation Measure 4.4-1b. Binding instruments of an adaptive management plan for bats could include, for example, increasing the cut-in speed of one or more turbines (curtailment) during times of increased bat activity.</p>	Significant and Unavoidable

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
<p>Impact 4.4-4: Project construction would result in temporary and permanent impacts on California red-legged frog and California tiger salamander, including loss of upland aestivation habitat for these species.</p>	<p>Less than Significant with Mitigation</p>	<p>Mitigation Measure 4.4-4: The Applicant shall avoid or minimize take of individual California red-legged frogs and California tiger salamanders by implementing temporary protection measures before and during construction, and by providing habitat compensation and enhancement for permanent impacts.</p> <p><i>Construction Measures</i></p> <p><u><i>Before Construction (i.e., before staging activities)</i></u></p> <ul style="list-style-type: none"> i. A Sensitive Species Relocation Plan shall be prepared and submitted to Contra Costa County, USFWS, and CDFG for review and approval at least three weeks before the start of groundbreaking. The purpose of the plan is to standardize relocation methods and relocation sites. ii. The Applicant shall submit the name and credentials of a biologist qualified to act as construction monitor to the County, USFWS, and CDFG for review and approval at least 15 days before construction work begins. General minimum qualifications are a four-year degree in biological sciences or other appropriate training and/or experience in surveying, identifying, and handling California tiger salamanders and California red-legged frogs. iii. At least 15 days before groundbreaking, the Applicant and its contractors shall install frog-exclusion fencing (i.e., silt fences) around all construction areas that are within 100 feet of potential California red-legged frog or California tiger salamander aquatic breeding habitat. iv. The County-, USFWS- and CDFG-approved biologist shall survey the work sites no more than two weeks before the onset of construction. If California tiger salamanders or California red-legged frogs are found, the biologist shall inform the County and contact USFWS and CDFG to determine whether moving these individuals is appropriate. If USFWS and CDFG approve moving the animals, then the Applicant shall allow the approved biologist sufficient time to move frogs and/or salamanders from the work sites before work begins. If these species are not identified, construction can proceed at these sites. v. To-be-reclaimed turbine pad areas shall be reviewed on a case-by-case basis, by a qualified biologist, to determine the presence and extent of burrow complexes. Survey results shall be provided to the County to inform the reclamation of turbine pad areas (further details are provided in "After Construction," below). <p><u><i>During Construction</i></u></p> <ul style="list-style-type: none"> vi. Active work areas, including areas where construction equipment and materials are staged, shall be monitored during construction to identify, capture, and relocate sensitive amphibians, if present. vii. The County-, USFWS- and CDFG-approved biologist shall use professional judgment to determine whether (and if so, when) the California tiger salamanders and/or California red-legged frogs are to be moved. The approved biologist shall have authority to halt construction work, if necessary, to avert avoidable take of listed species. 	<p>Less than Significant</p>

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.4-4 (cont.)		<p><i>After Construction</i></p> <p>viii. Depending on the pre-construction survey results of to-be-reclaimed turbine pad areas, pads shall be restored in a manner that achieves the benefits of restoration while retaining the benefits of existing burrow-complex habitat.</p> <p>Other Measures²</p> <p>ix. The Applicant shall provide compensation for permanent impacts on California tiger salamander and California red-legged frog aestivation habitat at a 1:1 ratio (at least one square foot of compensation for each square foot of net impact) or a higher ratio if required by USFWS or CDFG during the permitting process. A "higher ratio" may result in a less than 1 square foot by 1 square foot replacement on the ground if higher quality habitat than that affected by the Project is obtained. Compliance with required mitigation ratios shall be verified by the USFWS and CDFG.</p> <p>x. The Applicant shall provide compensation for temporary impacts on California tiger salamander and California red-legged frog aestivation habitat at a 1:1 ratio (at least one square foot of compensation for each square foot of net impact) or a higher ratio if required by USFWS or CDFG during the permitting process. A "higher ratio" may result in a less than 1 square foot by 1 square foot replacement on the ground if higher quality habitat than that affected by the Project is obtained. Compliance with required mitigation ratios shall be verified by the USFWS and CDFG.</p> <p>xi. Suitable compensation consists of: (1) purchasing and enhancing suitable habitat, converting it to a conservation easement, and conveying the easement to a managing agency or institution in perpetuity; (2) participating in a resource agency-approved mitigation bank that provides offset mitigation credits for loss of California tiger salamander and California red-legged frog habitat; or (3) a combination of both.</p>	
Impact 4.4-5: Project construction activities could affect listed and special-status reptiles such as Alameda whipsnake, western pond turtle, and San Joaquin coachwhip.	Less than Significant with Mitigation	<p>Mitigation Measure 4.4-5: The Applicant shall perform pre-construction surveys, perform ongoing relocation of identified animals out of construction areas, and compensate for temporary and permanent habitat impacts as follows:</p> <p>i. No more than two weeks prior to commencement of surface-disturbing activities, concurrent with other pre-construction wildlife surveys, a County-, CDFG-, and USFWS-approved biologist shall survey for special-status reptile populations. If individuals of these species are found within the work site, they shall be relocated to suitable habitat 0.5 mile or farther from the work site.</p>	Less than Significant

² Concerning mitigation ratios: this mitigation measure provides for a minimum mitigation ratio of 1:1, however, determination of the final ratio as applied to the Project is expressly under the authority of the resource agencies with jurisdiction over the subject matter (i.e., the USFWS, CDFG) and has not been determined at this time. The County understands that resource agencies like USFWS and CDFG are concerned primarily with the quality of the habitat to be conserved. While mitigation ratios of 1:1 for temporary impacts and 3:1 for permanent impacts commonly are imposed, the actual ratios imposed for this Project will depend on site-specific, project-specific, impact-specific considerations for each of the affected species.

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.4-4 (cont.)		<ul style="list-style-type: none"> ii. Immediately prior to the fill of any aquatic habitat (e.g., during road-widening activities), an approved biologist shall conduct a survey for western pond turtle. If encountered, turtle(s) shall be relocated to suitable habitat 0.5 mile or farther from the work site. 	
Impact 4.4-6: Project construction would have temporary and permanent impacts on potential San Joaquin kit fox habitat.	Less than Significant with Mitigation	<p>Mitigation Measure 4.4-6a: To reduce impacts to San Joaquin kit fox and its habitat, the Applicant shall implement the following measures along construction work corridors, work sites, and staging areas:</p> <ul style="list-style-type: none"> i. Pre-construction surveys shall be conducted within 200 feet of work areas to identify potential San Joaquin kit fox dens or other refugia in and surrounding work areas. A qualified biologist shall conduct the survey for potential kit fox dens 14 to 30 days before construction begins. All identified potential dens shall be monitored for evidence of kit fox use by placing an inert tracking medium at den entrances and monitoring for at least 3 consecutive nights. ii. If no activity is detected at these den sites, they shall be closed following guidance established in USFWS documents referenced above. iii. If kit fox occupancy is determined at a given site, the construction manager shall be immediately informed that work shall be halted within 200 feet of the den and the USFWS and CDFG shall be contacted within 24 hours. Depending on the den type, reasonable and prudent measures to avoid effects to kit foxes would include seasonal limitations on project construction at the site (i.e., restricting the construction period to avoid spring-summer pupping season), and/or establishing a construction exclusion zone around the identified site, or resurveying the den a week later to determine species presence or absence. <p>Mitigation Measure 4.4-6b: The Applicant shall compensate for impacts on San Joaquin kit fox grassland habitat by providing mitigation either through acquiring and dedicating lands into conservation easements or purchasing mitigation credits at compensation ratios that have been approved by USFWS and CDFG. The Applicant shall acquire San Joaquin kit fox mitigation lands based on anticipated impacts on up to approximately 111 acres of suitable habitat (18 acres of permanent impacts; 93 acres of temporary impacts). Mitigation ratios applied for impacts on San Joaquin kit fox habitat shall be 1:1 for temporary impacts and 1:1 for permanent impacts (at least one square foot of compensation for each square foot of net impact) or a higher ratio if required by USFWS or CDFG during the permitting process. A "higher ratio" may result in a less than 1 square foot by 1 square foot replacement on the ground if higher quality habitat than that affected by the Project is obtained. Compliance with required mitigation ratios shall be verified by the USFWS and CDFG.</p>	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.4-6 (cont.)		<p>Mitigation Measure 4.4-6c: To maintain under conservation easement the full acreage required for the original Los Vaqueros Reservoir Expansion Project, the Applicant shall replace any affected acreage of existing kit fox easement with an equivalent amount of acreage. The Applicant shall provide compensation for permanently affected conservation easement acreage at a 4:1 ratio or a higher ratio if required by USFWS or CDFG during the permitting process. Compensation for temporary impacts to lands within conservation easements shall be provided at a ratio of 1:1 or a higher ratio if required by USFWS or CDFG. A "higher ratio" may result in a less than 1 square foot by 1 square foot replacement on the ground if higher quality habitat than that affected by the Project is obtained. Compliance with required mitigation ratios shall be verified by the USFWS and CDFG. Temporarily impacted areas shall be reseeded with native species as described in the General Biological Resources Mitigation Measures.</p>	
Impact 4.4-7: Project construction could affect non-listed special-status mammal species (American badger and San Joaquin pocket mouse).	Less than Significant with Mitigation	<p>Mitigation Measure 4.4-7: The Applicant shall minimize impacts on American badger and San Joaquin pocket mouse by minimizing the Project footprint, performing pre-construction surveys, and passively or actively relocating animals.</p> <ol style="list-style-type: none"> i. Limiting the Project footprint to the smallest possible area shall minimize impacts on San Joaquin pocket mouse. ii. Concurrent with other required winter/spring month pre-construction surveys (e.g., pre-construction surveys for kit fox and burrowing owl), a qualified biologist shall perform a survey to identify the presence of American badgers. If this species is not found, no further mitigation of potential impacts on American badgers shall be required. iii. If American badgers are identified in the impact area, they shall be passively relocated using burrow exclusion (e.g., installing one-way doors on burrows) or similar CDFG-approved exclusion methods. Under some situations, it might be necessary to actively relocate American badgers (e.g., using live traps) to protect individuals from potentially harmful situations. Such relocation shall only be performed with advance CDFG coordination and concurrence. iv. When unoccupied dens are encountered outside of work areas but within 100 feet of proposed activities, vacated dens shall be inspected to ensure they are empty and temporarily covered using plywood sheets or similar materials. Temporary covers shall be removed when Project construction is complete. v. If, during construction, American badger occupancy is determined at a given site within the work area, the construction manager shall be informed and work halted immediately. Depending on the den type, reasonable and prudent measures to avoid harming American badgers shall be implemented and would include seasonal limitations on Project construction near the site (i.e., restricting the construction period to avoid spring-summer pupping season), and/or establishing a construction exclusion zone around the identified site, or resurveying the den a week later to determine species presence or absence. 	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.4-8: Project construction activities could result in impacts on longhorn fairy shrimp and vernal pool fairy shrimp and their habitat.	Less than Significant with Mitigation	Mitigation Measure 4.4-8: The Applicant shall perform a habitat assessment of the F-string to identify potential fairy shrimp habitat. If potential habitat is identified, then a 250-foot buffer shall be established around the potential habitat.	Less than Significant
Impact 4.4-9: Project construction could affect populations of special-status plant species.	Less than Significant with Mitigation	<p>Mitigation Measure 4.4-9: To reduce the potential impact on special-status plant populations, the Applicant shall implement the following:</p> <ul style="list-style-type: none"> i. Floristic surveys shall be performed along the F-string in accordance with CDFG and USFWS rare plant survey guidelines, and the results of those surveys shall be made available to CDFG and the USFWS during the Project permitting process. ii. In areas where floristic surveys have already been completed, surveys shall be supplemented to meet CDFG requirements (CDFG, 2009) which include appropriately timed and numbered survey visits³. iii. Construction activities shall avoid identified crownscale, ball saltbush, fragrant cudweed, hop tree, and elderberry shrubs that occur on the Project area and Mitigation Measure 4.4-9.v shall also apply to these species; Mitigation Measure 4.4-9.vi, shall also apply to crownscale and elderberry shrubs. iv. Exclusion fencing and/or silt fencing shall be installed around special-status plant populations with as large a buffer as possible to minimize the potential for direct and indirect impacts, such as fugitive dust and accidental intrusion into sensitive areas. v. Where avoidance is not feasible, the Applicant shall compensate for the loss of special-status plants by hiring a qualified ecologist to develop and implement a restoration and mitigation plan according to CDFG guidelines and in coordination with CDFG and USFWS. At a minimum, the plan shall include collection of reproductive structures from affected plants, a full description of microhabitat conditions necessary for each affected species, seed germination requirements, restoration techniques for temporarily disturbed occurrences, assessments of potential transplant and enhancement sites, a timetable for implementation, success and performance criteria, a monitoring program, and measures to ensure long-term sustainability. vi. The Applicant shall develop and implement a Noxious Weed and Invasive Plant Control Plan consistent with standard Best Management Practices (see for example: Department of Transportation, State of California (2003); Storm Water Quality Handbooks; and Project Planning and Design Guide Construction Site Best Management Practices Manual). The plan shall be subject to review and approval by Contra Costa County and shall, at a minimum, address any required cleaning of construction vehicles to minimize spread of noxious weeds and invasive plants. 	Less than Significant

³ Surveys should be conducted at the time of year when species are both evident and identifiable, usually during flowering or fruiting, with visits spaced throughout the growing season. Many times this involves multiple visits to the same site (e.g., in early, mid, and late-season for flowering plants) to capture the floristic diversity at a level necessary to determine if special-status plants are present (CDFG, 2009).

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.4-10: Project construction activities could result in impacts on Sensitive Natural Communities, including Creeping Rye Grass Turfs.	Less than Significant with Mitigation	<p>Mitigation Measure 4.4-10: To reduce impacts on Sensitive Natural Communities, the Applicant shall implement the following:</p> <ul style="list-style-type: none"> i. Based on the documented distribution of Sensitive Natural Communities, Project design shall avoid and minimize impacts on these areas to the extent feasible ii. Where Sensitive Natural Communities cannot be avoided by Project design (e.g., on road alignments that must follow topographic contours or traverse low-lying areas), the Applicant shall provide on-site restoration and enhancement at a 1:1 ratio, or a higher ratio if required by CDFG, to redress temporary and permanent impacts. A “higher ratio” may result in a less than 1 square foot by 1 square foot replacement on the ground if higher quality habitat than that affected by the Project is obtained. iii. Upon project completion, the Applicant shall seed disturbed Creeping Rye Grass Turfs and Purple Needlegrass Grassland areas with native Creeping Rye Grass and Purple Needlegrass Grassland seed collected within or in the vicinity of impacts. Additional seed could be used to supplement seed mixes, but seed shall be from locally collected (within the ecoregion) source material and shall be appropriately selected for site conditions. 	Less than Significant
Impact 4.4-11: Project construction could affect potentially jurisdictional wetlands or waters, and streambeds and banks.	Less than Significant with Mitigation	<p>Mitigation Measure 4.4-11: To reduce impacts on jurisdictional wetlands or waters, and streambeds and banks, the Applicant shall implement the following:</p> <ul style="list-style-type: none"> i. Consistent with USACE, CDFG, and RWQCB, permit requirements, the final Project design shall avoid and minimize the fill of wetlands and other waters to the greatest practicable extent. ii. Areas that are avoided shall be subject to current Best Management Practices (BMPs) under the County’s most recent General National Pollutant Discharge Elimination System Permit (NPDES), including implementation of an effective Stormwater Pollution Prevention Program (SWPPP), presence of an on-site spill kit, and installation of silt fences along/around construction areas to inhibit soil movement into wetland features. iii. Where jurisdictional wetlands and other waters cannot be avoided, the following measures shall apply: <ul style="list-style-type: none"> a. Construction activities in drainage channel crossings shall be limited to low-flow periods: approximately April 15 to October 15, unless otherwise authorized by CDFG, RWQCB and/or the USACE. Excavation and grading activities performed during the wet season (October 15 to April 30) shall be conducted in accordance with the conditions of Mitigation Measure 4.10-3a and 4.10-3b. For channels or wetlands for which temporary soil removal is necessary, the top layer of the drainage or wetland bottom shall be stockpiled and preserved during construction. After Project construction, the stockpiled material shall be placed back into the drainage or wetland feature to return the beds to approximately their original composition. 	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.4-11 (cont.)		<ul style="list-style-type: none"> iv. To offset temporary and permanent impacts that occur as a result of the Project, restoration and compensatory mitigation shall be provided through the following mechanisms: <ul style="list-style-type: none"> a. The square footage of impacted jurisdictional waters shall be determined based on the USACE-approved wetland delineation and during USACE permitting. The Applicant shall then identify lands to provide for wetland preservation, restoration (enhancement) or creation at a 1:1 ratio, or a ratio acceptable to USACE and/or RWQCB. On-site mitigation is preferable and shall be implemented if such opportunities are available. Development rights to the on-site mitigation land shall be grant deeded to the County or another acceptable public agency. b. If the Applicant restores and/or creates wetlands on site, the Applicant shall prepare a wetland mitigation and monitoring plan. The plan, developed by a qualified biologist in coordination with USACE, CDFG, and/or RWQCB, shall detail mitigation and monitoring obligations for temporary and permanent impacts to wetlands and other waters as a result of construction activities. The plan shall quantify the total acreage lost and describe the following: mitigation ratios for lost habitat; annual success criteria; mitigation sites; monitoring and reporting requirements; and site-specific plans to compensate for wetland losses resulting from the Project. c. The Applicant shall submit the wetland mitigation and monitoring plan to the appropriate regulatory agencies for approval (e.g., USACE, CDFG, and/or RWQCB). 	
Impact 4.4-12: Project construction activities could temporarily affect active breeding bird nest sites.	Less than Significant with Mitigation	<p>Mitigation Measure 4.4-12: To reduce the impact on active raptor nests and nests of other special-status birds, the Applicant shall implement the following:</p> <ul style="list-style-type: none"> i. To the greatest extent practicable, construction activities shall not take place during the nesting season (February 1 through August 31). If construction activities avoid the nesting season, then no further mitigation is required. ii. If seasonal avoidance is not possible and active construction work (i.e., ground clearing and grading, including removal of trees or shrubs) is scheduled to take place during the nesting season, then the following measures shall be implemented: <ul style="list-style-type: none"> a. No more than 30 days prior to commencement of construction, a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitat within 500 feet of work areas. b. If pre-construction surveys indicate that nests are inactive or potential habitat is unoccupied, no further mitigation shall be required in this regard. c. If active nests are found during preconstruction surveys, no-disturbance buffer zones shall be established around active nests. The buffer zones shall not be encroached upon during the breeding season or until it is determined by a qualified wildlife biologist that all young have fledged. Typical buffers include 500 feet for raptors and 250 feet for other nesting birds (e.g., shorebirds, waterfowl, and passerine birds). The size of the buffer 	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.4-12 (cont.)		<p>zones and types of construction activities allowed in these areas, if any, could be further modified during construction in coordination with CDFG and shall be based on existing noise and human disturbance levels in the Project area.</p> <p>d. If construction commences during the nonbreeding season and continues into the breeding season, most songbirds that choose to nest next to active construction sites are generally considered to acclimate to construction activities. However, since nest abandonment may occur in some instances, nesting site monitoring shall be conducted by a qualified wildlife biologist and "no-disturbance" buffer zones shall be established in coordination with CDFG around active nests to prevent impacts on nesting birds and their young.</p>	
Impact 4.4-13: Project construction and operation would result in direct and indirect impacts on common wildlife species.	Less than Significant	None required.	
Impact 4.4-14: Project construction may impact trees that are protected under Contra Costa County's Tree Protection and Preservation Ordinance.	Less than Significant	None required.	
Cultural Resources			
Impact 4.5-1: The Project would cause a substantial adverse change in the setting of a historical resource.	Less than Significant	None required.	
Impact 4.5-2: The Project could cause an intentional and/or inadvertent impact to the significance of a historical resource.	Potentially Significant	<p>Mitigation Measure 4.5-2a: Prior to commencing construction, a qualified archaeologist and a Native American representative shall assess the current site condition of CA-CCO-310, CA-CCO-417, CA-CCO-456, and CA-CCO-434/H (for comparative purposes following construction activity). Three sites have not been formally recorded by an archaeologist within the last 10 years (1996 [CA-CCO-310; CA-CCO-456] and 1987 [CA-CCO-434/H]). Site record updates on a Department of Parks and Recreation Form 523 shall be completed, that include thorough photo documentation, description, GIS location information, and detailed sketch maps and plan drawings. The site records shall be provided to EBRPD for inventory and interpretive potential.</p> <p>Mitigation Measure 4.5-2b: Following construction activities, a qualified archaeologist and a Native American representative shall reassess the site condition of CA-CCO-310, CA-CCO-417, CA-CCO-456, and CA-CCO-434/H.</p> <p>Mitigation Measure 4.5-2c: Construction contracts shall require avoidance of cultural sites.</p>	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Cultural Resources (cont.)			
Impact 4.5-2 (cont.)		<p>Mitigation Measure 4.5-2d: Temporary fencing shall be installed around the boundaries of CA-CCO-310 and the northernmost extent of CA-CCO-434/H during Project construction to prevent inadvertent or intentional damage to the site by construction personnel. Visitors to cultural sites shall only include those with professional or scientific interests or Native American representatives.</p> <p>Mitigation Measure 4.5-2e: Project personnel, including construction crews, shall be alerted to the archaeological sensitivity of the Project area and the importance of protecting cultural resources. Project personnel shall be required to attend a mandatory on-site instruction led by a qualified archaeologist and a Native American representative that discusses what types of cultural materials are and could be present in the Project area. The instruction shall include appropriate training to identify and protect cultural resources in the event that they are inadvertently unearthed. All Project personnel shall be informed that they are prohibited from entering the adjacent Vasco Caves Regional Preserve property owned by the East Bay Regional Park District and that entry onto said property constitutes trespassing punishable by law. Information about the specific locations of cultural resources on the Project site and in the surrounding area shall be kept confidential and provided only on a need-to-know basis.</p> <p>Mitigation Measure 4.5-2f: All ground-disturbing activity in String A, removal of the L1-L5 turbines, and construction of the new O&M building shall be monitored by a qualified archaeologist and a Native American representative. An Archaeological Monitoring Plan shall be prepared prior to commencement of any ground-disturbing activities that includes:</p> <ul style="list-style-type: none"> • Person(s) responsible for conducting monitoring activities, including Native American monitors; • How the monitoring shall be conducted and the required format and content of monitoring reports; • Person(s) responsible for overseeing and directing the monitors; • Schedule for submittal of monitoring reports and person(s) responsible for review and approval of monitoring reports; • Physical monitoring boundaries; • Protocol for notifications in case of encountering of cultural resources, as well as methods of dealing with the encountered resources (e.g., collection, identification, curation); • Methods to ensure security of cultural resources sites; and • Protocol for notifying local authorities (i.e. County Sheriff, EBRPD Police) should site looting and other illegal activities occur during construction 	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Cultural Resources (cont.)			
Impact 4.5-3: The Project could cause a substantial adverse change in the significance of unique archaeological resources that are within the Project area, but have not yet been discovered.	Less than Significant with Mitigation	<p>Mitigation Measure 4.5-3: The Applicant and its contractors shall take a proactive role in protecting archaeological resources encountered during implementation of the Project. Prehistoric archaeological materials that might be present in the area include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If archaeological resources are encountered, the Applicant shall immediately halt all activity within 100 feet of the find and notify the Contra Costa County Department of Conservation & Development (DCD).</p> <p>The find shall be evaluated by an archaeologist who meets the Secretary of the Interior’s Professional Qualification Standards and if necessary, an appropriate Native American representative. If the archaeologist or Native American representative determines that the resources may be significant, then they shall consult with the DCD to formulate an appropriate treatment plan for the resources. Avoidance shall be considered the default mitigation, though the DCD will ultimately determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, Project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed in other parts of the Project area while mitigation for archaeological resources is being carried out, but work within 100 feet of the find shall remain halted until the DCD explicitly gives authority to proceed.</p>	Less than Significant
Impact 4.5-4: The Project could directly or indirectly destroy a unique paleontological resource or site or a unique geological feature.	Less than Significant with Mitigation	<p>Mitigation Measure 4.5-4: The Applicant and its contractors shall take a proactive role in protecting paleontological resources encountered during implementation of the Project. Paleontological resources that might be present in the area include fossilized bone, teeth, shell, tracks, trails, casts, molds, and impressions. If paleontological resources are encountered, the Applicant shall immediately halt all activity within 100 feet of the find and notify the DCD.</p> <p>The find shall be evaluated by a qualified paleontologist. If the paleontologist determines that the resources may be significant, then they shall consult with the DCD to formulate an appropriate treatment plan for the resources. Avoidance shall be considered the default mitigation, though the DCD will ultimately determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, Project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted in conformance with Society of Vertebrate Paleontology Guidelines (SVP, 1995; SVP, 1996). Work may proceed in other parts of the Project area while mitigation for paleontological resources is being carried out, but work within 100 feet of the find shall remain halted until the DCD explicitly gives authority to proceed.</p>	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Cultural Resources (cont.)			
Impact 4.5-5: The Project could disturb human remains that are located within the Project area, but have not yet been discovered.	Less than Significant with Mitigation	Mitigation Measure 4.5-5: The Applicant and its contractors shall take a proactive role in protecting human remains encountered during implementation of the Project. If potential human remains are encountered, the Applicant shall halt work within 100 feet of the find and immediately contact the Contra Costa County coroner in accordance with Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. The DCD shall then be contacted. If the coroner determines that the remains are Native American, the coroner will contact the Native American Heritage Commission (NAHC) within 24 hours. As provided in Public Resources Code Section 5097.98, the NAHC will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.	Less than Significant
Energy Conservation			
Impact 4.6-1: Construction and operation of the Project would result in consumption of energy.	Less than Significant	None required.	
Impact 4.6-2: Construction and operation of the Project would require use of transportation energy.	Less than Significant	None required.	
Impact 4.6-3: The Project's overall use of efficient transportation alternatives would be limited.	Less than Significant	None required.	
Geology and Soils			
Impact 4.7-1: Project implementation would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.	Less than Significant	None required.	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Geology and Soils (cont.)			
Impact 4.7-2: Project implementation would expose people or structures to potential substantial adverse effects as a result of strong seismic ground shaking.	Less than Significant with Mitigation	<p>Mitigation Measure 4.7-2: The Applicant shall comply with and implement all of the following measures designed to reduce potential substantial adverse effects resulting from strong seismic ground shaking:</p> <p>(A) A California licensed geotechnical engineer and engineering geologist shall perform a comprehensive geotechnical investigation of all Project facilities based on adequate subsurface exploration, laboratory testing of selected samples, and engineering/ geologic analysis of the data gathered. The information shall be compiled and presented as a geotechnical report that provides an evaluation of potential seismic and geologic hazards, and provides 2007 CBC seismic design parameters, along with providing specific standards and criteria for site grading, drainage and foundation design.</p> <p>(B) The Project geotechnical engineer or engineering geologist shall prepare an Original Geologic Map of the Project area based on subsurface exploration, field geologic mapping and interpretation of historic aerial photographs. The map shall show the details of site geologic conditions, including lithologic units (i.e., bedrock units/stratigraphy), geologic structure, and the distribution of surficial deposits (e.g. colluvium, landslides and artificial fill).</p> <p>(C) The information shall be compiled and presented as a geotechnical report that provides an evaluation of potential seismic hazards, including secondary seismic ground failures such as liquefaction and collapse, lateral spread and earthquake induced settlement, and other geologic hazards, and provides 2007 CBC seismic design parameters, along with providing specific standards and criteria for site grading, drainage and foundation design.</p> <p>(D) The geotechnical report shall be subject to technical review by the County Peer Review Geologist and review and approval by the County Zoning Administrator prior to issuance of grading permits or building permits. The recommendations in the approved geotechnical report shall be incorporated into the design and construction specifications and shall be implemented during build-out of the Project. Also prior to issuance of grading or building permits, the Project geotechnical engineer or engineering geologist shall review grading and improvement plans to verify their consistency with the recommendations in the approved geotechnical report.</p> <p>(E) The Project geotechnical engineer shall provide observation and testing services during grading and foundation-related work, and shall submit a grading completion report to the County prior to requesting the final inspection. This report shall provide full documentation of the geotechnical monitoring services provided during construction, including the results of ASTM testing as well as geologic mapping of all cut slopes that are constructed. The Final Grading Report shall also certify compliance of the as-built Project with the recommendations in the approved geotechnical report.</p>	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Geology and Soils (cont.)			
Impact 4.7-3: In the event of a major earthquake in the region, people and property could be exposed to seismically-induced ground failure, including liquefaction, lateral spreading and earthquake-induced settlement.	Less than Significant with Mitigation	Mitigation Measure 4.7-3: Implement Mitigation Measure 4.7-2.	Less than Significant
Impact 4.7-4: Project implementation would result in substantial erosion or loss of topsoil.	Less than Significant with Mitigation	None required.	
Impact 4.7-5: Project implementation would expose people or structures to potential substantial adverse effects as a result of landslides.	Less than Significant with Mitigation	<p>Mitigation Measure 4.7-5: Perform Site-Specific Slope Stability Evaluation. The Applicant shall perform a site-specific slope stability evaluation for Project improvements that require grading or excavation in areas where slopes exceed 30 percent. The slope stability evaluation shall assess the localized potential for slope instability in these areas, and shall identify appropriate design and construction measures to incorporate into final Project plans. The site-specific slope stability evaluation shall include, but not be limited to, the following measures:</p> <p>(A) Where landslides are confirmed within or immediately adjacent to planned improvements, provide a slope stability evaluation (report) for static and pseudo-static conditions. The approach utilized shall be consistent with the California Geological Survey, 2008, Guidelines for Evaluating and Mitigating Seismic Hazards in California (CGS Special Publication 117A) or other generally accepted methodology. The Project geologic consultant shall explain the methodology used and justify the assumptions that are made regarding the engineering properties of soil, rock and saturation.</p> <p>(B) The slope stability evaluation report shall provide specific geotechnical design measures to achieve long-term stability. These shall include, but will not necessarily be limited to, corrective grading of landslides or colluvial wedges that present the potential to effect improvements. Additionally, standard practices such as minimizing the amount of grading required in areas that are deemed to be stable in their existing condition; installing adequate drainage; avoiding grading activities and excavations during and immediately following periods of heavy rainfall; geotechnical monitoring of slopes for stability during construction; minimizing the gradient of engineered slope; following natural topography; and, salvaging topsoil for use during final grading to facilitate revegetation, shall be implemented during construction.</p> <p>(C) For construction requiring excavations, such as foundations, appropriate support and protection measures shall be implemented to maintain the stability of excavations and to protect construction worker safety. Where excavations are adjacent to existing structures, utilities, or other features that may be adversely affected by potential ground movements, bracing, underpinning, or other methods of support for the affected facilities shall be implemented.</p>	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Geology and Soils (cont.)			
Impact 4.7-5 (cont.)		Mitigation Measure 4.7-4b: The slope stability evaluation shall be subject to technical review by the County Peer Review Geologist and review and approval by the County Zoning Administrator prior to issuance of grading permits or building permits. The recommendations in the approved slope stability evaluation shall be incorporated into the design and construction specifications and shall be implemented during build-out of the Project. Also prior to issuance of grading or building permits, the Project geotechnical engineer or engineering geologist shall review grading and improvement plans to verify their consistency with the recommendations in the approved slope stability evaluation.	
Impact 4.7-6: Project implementation would occur on expansive soils, creating risks to life and property.	Less than Significant	None required.	
Impact 4.7-7: Project implementation could require installation of septic tanks or alternative waste disposal systems in an area containing unsuitable soils.	Less than Significant	None required.	
Greenhouse Gas Emissions			
Impact 4.8-1: The Project would result in emissions of greenhouse gases that would contribute to global climate change.	Less than Significant	None required.	
Impact 4.8-2: The Project could conflict with CARB's Climate Change Scoping Plan.	Less than Significant with Mitigation	Mitigation Measure 4.8-2: Low SF ₆ Leak Rate Circuit Breakers and Monitoring. Prior to issuance of building permits for the substation, the Applicant shall ensure that the new circuit breakers installed at Tres Vaqueros Substation have a guaranteed SF ₆ leak rate of 0.5 percent per volume or less. The Applicant shall provide Contra Costa County with documentation of compliance, such as specification sheets. In addition, the Applicant shall monitor SF ₆ -containing circuit breakers at Tres Vaqueros Substation consistent with Scoping Plan Measure H-6 for the detection and repair of leaks.	Less than Significant
Hazards and Hazardous Materials			
Impact 4.9-1: Project construction, operation and maintenance could, through routine transport, use or disposal, accidentally release hazardous materials, thereby exposing construction workers, Project personnel and the public to hazardous materials or releasing hazardous materials into the environment.	Less than Significant with Mitigation	Implement Mitigation Measure 4.10-3a.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Hazards and Hazardous Materials (cont.)			
Impact 4.9-2: Grading and excavation for Project construction could cause a release of hazardous materials into the environment or expose construction workers to these substances, if hazardous materials are present in the subsurface.	Less than Significant	None required.	
Impact 4.9-3: Project construction could cause a significant hazard related to accidental rupture of the natural gas pipelines that crosses the Project area.	Less than Significant with Mitigation	Mitigation Measure 4.9-3: At least 30 days prior to commencement of construction activities, the Applicant shall provide PG&E the pipeline operators with the Project construction plans, notify the County that it has done so, and make arrangements with PG&E the pipeline operators to identify underground utilities potentially affected by the Project so that the Applicant can modify its construction plans to avoid utility conflicts. Prior to beginning construction, the Applicant shall make further arrangements with PG&E the pipeline operators regarding protection of the existing gas pipelines, possibly to include having a PG&E the pipeline operators' monitor present during excavation near the pipelines to ensure that the facilities are not damaged.	Less than Significant
Impact 4.9-4: The Project could cause a safety hazard through interference with air navigation.	Less than Significant with Mitigation	Mitigation Measure 4.9-4: The Applicant shall submit the FAA Determination of No Hazard on the final turbine selection and layout to the County prior to issuance of building permits.	Less than Significant
Impact 4.9-5: Improper handling or use of flammable or combustible materials such as internal combustion equipment could result in wildland fires, exposing people or structures to a significant risk of loss, injury, or death.	Less than Significant with Mitigation	Mitigation Measure 4.9-5: Prior to commencement of construction activities, the Applicant shall submit a Fire Safety Plan to, and obtain approval from, CalFire and the Contra Costa County Fire Protection District. The Applicant shall submit the approved plan to the County Zoning Administrator. The measures contained in the approved plan shall be strictly enforced. The Fire Safety Plan shall describe on-site BMPs to reduce the potential for accidental fires which shall include, but not necessarily be limited to, the following (unless deemed unnecessary or modified by CalFire or the Fire Protection District): <ol style="list-style-type: none"> 1) All equipment used during construction must have an approved spark arrester. 2) Fire-suppression equipment and tools shall be readily available at all work locations and workers shall be trained in their use. 3) Construction workers will receive fire hazard training to identify actions that will reduce the risk of ignition and facilitate immediate control of an incipient fire. The training shall also include emergency communication protocols. 4) Adequate water supplies for fire prevention shall be maintained at all times. 	Less than Significant
Impact 4.9-6: During normal operation, the effects of bending and stress on rotor blades over time could lead to blade failure and become a potential blade throw hazard.	Less than Significant	None required.	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Hazards and Hazardous Materials (cont.)			
<p>Impact 4.9-7: Because of their large size and proposed location, the proposed turbines have the potential to interfere with microwave, radar, and communications signals and be a hazard to public safety.</p>	<p>Less than Significant with Mitigation</p>	<p>Mitigation Measure 4.9-7a: The Applicant shall notify the NTIA of the Project and request review of the Project's potential impacts to microwave and radar communications systems. Should potential impacts to microwave and/or radar systems be identified, the Applicant shall coordinate with the relevant agency or agencies to resolve concerns. These actions shall be completed prior to issuance of building permits.</p> <p>Mitigation Measure 4.9-7b: Prior to issuance of building permits, the Applicant shall consult with local public safety providers, such as the California Highway Patrol, Calfire, the Contra Costa County Fire Protection District, the Contra Costa County Sheriff's Office, and private ambulance service providers, regarding their use of LMR systems and the Project's potential to impact those systems. If it is determined through consultation that the Project will or is likely to impact LMR systems, then the Applicant shall take the necessary steps to ensure that LMR communications will not be disrupted during Project construction and operation, possibly by repositioning LMR repeaters or adding repeaters at appropriate locations. If at any time local public safety providers inform the Applicant that the Project is interfering with LMR communications, then the Applicant shall implement any additional measures necessary to restore LMR communications to no less than their pre-Project levels.</p>	<p>Less than Significant</p>
Hydrology and Water Quality			
<p>Impact 4.10-1: The Project could violate a water quality standard during operations, or result in other water quality degradation during operations.</p>	<p>Less than Significant with Mitigation</p>	<p>Mitigation Measure 4.10-1: In order to ensure that accidental spills of fuels, oils, greases, coolant, transformer oil, and other chemicals used on-site do not result in water quality degradation, the Applicant shall prepare a spill prevention and control plan for Project operations. The Applicant shall implement the recommendations of this plan prior to commencement of Project operations. The plan shall provide for compliance with local, State, and federal regulations regarding on-site storage and use of fluids and compounds, including:</p> <ul style="list-style-type: none"> • Storage and handling criteria for fuels, oils, lubricants, antifreeze, and other fluids that minimize fluid release; • Storage and handling criteria for waste oils, lubricants, transformer oil, and other fluids that minimize fluid release; • Use of secondary containment surrounding transformers and any on-site transformer oil storage areas, as relevant; • Use of secondary containment for temporary storage of waste/spent oils, lubricants, transformer oil, or other fluids on-site; • Operational spill prevention measures including staff training for the recognition and proper handling of potentially hazardous fluids; and • Cleanup procedures that, in the event of a spill, provide for identification and response procedures to contain spills, and properly dispose of contaminated soils or other materials, so as to minimize potential water quality effects. 	<p>Less than Significant</p>

**TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT**

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Hydrology and Water Quality (cont.)			
Impact 4.10-2: The Project could interfere with groundwater recharge or deplete groundwater supplies.	Less than Significant	None required.	
Impact 4.10-3: Project construction and operation could alter drainage patterns on-site in a manner which could result in erosion, sedimentation, or flooding on-site or off site.	Less than Significant with Mitigation	<p>Mitigation Measure 4.10-3a: To control and manage stormwater runoff during construction and decommissioning, the Applicant shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) as required under the General Construction Permit for Discharges of Storm Water Associated with Construction Activities, for all construction and decommissioning phases of the Project. The SWPPP shall identify pollutant sources that may affect the quality of stormwater discharge and shall require implementation of Best Management Practices (BMPs) to reduce pollutants in stormwater discharges.</p> <p>BMPs shall include, but would not be limited to:</p> <ol style="list-style-type: none"> 1. Excavation and grading activities in areas with slopes greater than 30 percent or directly adjacent to open water shall, to the extent possible, be conducted during the dry season (April 15 to October 15). If excavation and grading activities <u>for other areas</u> must be performed during the wet season (October 15 to April 15), they shall be conducted in accordance with County requirements and the requirements of the General Construction Permit for Discharges of Storm Water Associated with Construction Activities. 2. If excavation occurs during the rainy season, storm runoff from the construction area shall be regulated through a storm water management/erosion control plan that shall include temporary on-site silt traps and/or basins with multiple discharge points to natural drainages and energy dissipaters. Stockpiles of loose material shall be covered and runoff diverted away from exposed soil material. If work stops due to rain, a positive grading away from slopes shall be provided to carry the surface runoff to areas where flow would be controlled, such as the temporary silt basins. Sediment basins/traps shall be located and operated to minimize the amount of off-site sediment transport. Any trapped sediment shall be removed from the basin or trap and placed at a suitable location on-site, away from concentrated flows, or removed to an approved disposal site. 3. Temporary erosion control measures (such as fiber rolls, staked straw bales, <u>temporary silt fences and straw-filled wattles</u>, detention basins, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) shall be provided until perennial revegetation or landscaping is established and can minimize discharge of sediment into nearby waterways. For construction within 500 feet of a water body, appropriate erosion control measures shall be placed between the potential source of sediment and the water body. 4. Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures. 5. No disturbed surfaces will be left without erosion control measures in place during the rainy season, from October 15th through April 30th. 	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Hydrology and Water Quality (cont.)			
Impact 4.10-3 (cont.)		<ol style="list-style-type: none"> 6. Erosion protection shall be provided on all cut-and-fill slopes. Revegetation shall be facilitated by mulching, hydroseeding, or other methods and shall be initiated as soon as possible after completion of grading and, to the extent feasible, prior to the onset of the rainy season (by October 15). 7. A vegetation and/or engineered buffer shall be maintained, to the extent feasible, between the construction zone and all surface water drainages including riparian zones. 8. Vegetative cover shall be established on the construction site as soon as possible after disturbance. 9. BMPs selected and implemented for the Project shall be in place and operational prior to the onset of major earthwork on the site. The construction phase facilities shall be maintained regularly and cleared of accumulated sediment as necessary. Effective mechanical and structural BMPs that shall be implemented at the Project area include the following: <ol style="list-style-type: none"> a. Mechanical storm water filtration measures, including oil and sediment separators or absorbent filter systems such as the Stormceptor® system, shall be installed as appropriate within the storm drainage system to provide filtration of stormwater prior to discharge; b. Vegetative strips, high infiltration substrates, and grassy swales shall be used where appropriate throughout the Project area to reduce runoff and provide initial stormwater treatment; c. Permanent energy dissipaters shall be included for all permanent drainage outlets; d. The water quality detention basins and their maintenance procedures shall be designed to provide effective water quality control measures including the following: <ol style="list-style-type: none"> i. Maximize detention time for settling of fine particles; ii. Establish maintenance schedules for periodic removal of sedimentation, excessive vegetation, and debris that may clog basin inlets and outlets; iii. Maximize the detention basin elevation to allow the highest amount of infiltration and settling prior to discharge. 10. Hazardous materials such as fuels and solvents used on the construction sites shall be stored in covered containers and protected from rainfall, runoff, vandalism, and accidental release to the environment. All stored fuels and solvents will be contained in an area of impervious surface with containment capacity equal to the volume of materials stored. A stockpile of spill cleanup materials shall be readily available at all construction sites. Employees shall be trained in spill prevention and cleanup, and individuals shall be designated as responsible for prevention and cleanup activities. 11. Equipment shall be properly maintained in designated areas with runoff and erosion control measures to minimize accidental release of pollutants. 	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Hydrology and Water Quality (cont.)			
Impact 4.10-3 (cont.)		<p>Mitigation Measure 4.10-3b: Prior to issuance of grading or building permits and initiation of construction activities for the Project, the Applicant shall complete <u>prepare</u> a Drainage Management Plan. The plan shall be submitted to the <u>the</u> Contra Costa County Flood Control and Water Conservation District for review and approval <u>as part of the Flood Control District's issuance of a Drainage Permit, as required by the County's 1010 Drainage Ordinance. and the</u> and the <u>The</u> Applicant shall be required to implement and adhere to the <u>plan approved by the reviewing agency plan</u>. The plan shall include measures necessary to ensure that stormwater drainage from the proposed roadways, new substation, and other facilities is channeled into appropriately-sized drainage ditches, channels, culverts, stormwater retention ponds, and/or stormwater infiltration facilities. The plan shall require that all new or modified facilities are designed so as to ensure no net increase in stormwater discharge rates, flow velocities, or sediment transport would result from Project implementation, and that discharges from these facilities are designed so as to avoid concentrating of flow and subsequent downstream scouring or sedimentation. Proposed roadways shall be designed so as to ensure that potential for slope failure and erosion is minimized. <u>The following additional features shall also be included:</u></p> <ol style="list-style-type: none"> <u>a. Energy dissipating features shall be utilized at culvert outfalls and steep downslopes, as warranted.</u> <u>b. Ditches shall be constructed and maintained as flat-bottomed ditches, where applicable.</u> <u>c. Use of culverts shall be minimized; culverts shall be used only in areas where existing roads with culverts are widened, or new alignment of existing roads are required which cross existing ditches/ephemeral streams.</u> <u>d. Wherever possible, at-grade crossings shall be constructed where roads intersect drainageways.</u> <u>e. Culverts shall be placed at a skew angle to the road.</u> <u>f. New roads shall be constructed and maintained with an out-sloped roadway cross section.</u> <u>g. Prior to initiation of construction, the Applicant shall identify erodible soils during geotechnical field investigations, to the extent practicable, in support of erosion control BMP application.</u> <u>h. On-site grading and drainage plans shall be designed to minimize channel flow to the maximum extent practicable.</u> <u>i. Drainage and erosion control BMPs shall be applied, as warranted, including but not limited to:</u> <ol style="list-style-type: none"> <u>i. Rip-rap in channels;</u> <u>ii. Coarse road rock to encourage sheet flow across roads;</u> <u>iii. Erosion control blankets;</u> <u>iv. Use of buffer-strip BMPs</u> <u>j. Operations crews shall be trained by the Applicant to identify and repair drainage and erosion related problems.</u> 	

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Hydrology and Water Quality (cont.)			
Impact 4.10-4: The Project could create or contribute additional runoff water, which could exceed the capacity of drainage systems, and could create additional sources of polluted runoff.	Less than Significant with Mitigation	Mitigation Measure 4.10-4: Implement Mitigation Measures 4.10-3a and 4.10-3b.	Less than Significant
Impact 4.10-5: The Project could place structures in a 100-year flood hazard area, which could impede or redirect flood flows.	Less than Significant with Mitigation	Mitigation Measure 4.10-5: The Applicant shall ensure that the proposed stream crossings are designed so as to not substantially interfere with flood flows within the Project area. Specifically, the Applicant shall ensure that all stream crossings are sized to allow a 100-year flood to pass without backing up or ponding of water upstream of the crossing. For areas where 100-year flood flows have not been evaluated by FEMA, the Applicant shall complete a study that quantifies the 100-year flood flows along the stream reach where the crossing would be installed, and design the crossings as indicated previously. This study, where necessary, shall be incorporated into the Drainage Management Plan (see Mitigation Measure 4.10-3b).	Less than Significant
Land Use and Planning			
Impact 4.11-1: The Project could conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None required.	
Mineral Resources			
Because implementation of the Project would cause no impact on mineral resources, there are no impacts and no mitigation measures to be analyzed in this section.			
Noise			
Impact 4.13-1: Operation of the Project would increase local ambient noise levels.	Less than Significant	None required.	
Impact 4.13-2: Project construction and decommissioning activities would temporarily increase local ambient noise levels.	Less than Significant with Mitigation	Mitigation Measure 4.13-2a: The Applicant shall provide at least 30 days advance notice to the East Bay Regional Park District of all construction and decommissioning activities that would occur within 1,000 feet of either the Vasco Caves caretaker residence or the Vasco Caves guided tour route in order to limit disturbance to any persons that may be staying at the caretaker residence or participating in the guided tour. The notice shall include the construction time-of-day restrictions, the anticipated date of commencement, and the anticipated duration of construction activities that would occur within 1,000 feet of the residence or guided tour route. The Applicant shall simultaneously transmit a copy of the notice to the County Zoning Administrator.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Noise (cont.)			
Impact 4.13-2 (cont.)		<p>Mitigation Measure 4.13-2b: The Applicant construction contractor(s) shall schedule all nighttime deliveries to ensure a free flow of truck traffic. Trucks making nighttime deliveries shall proceed directly into the Project area without stopping, idling, or queuing on any portion of on-site access roads within 4,000 feet of the Vasco Caves caretaker residence. Use of compression release engine brakes (also known as “Jake brakes”) shall be prohibited within 4,000 feet of the Vasco Caves caretaker residence. In addition, all on-site nighttime delivery routes shall be planned in a fashion that would eliminates the need for delivery trucks to drive in reverse thereby eliminating after hours back-up alarm soundings. For example, the nighttime delivery drop-off staging area shall include an access road loop and all drivers shall be instructed to use the loop as opposed to driving in reverse at the staging area.</p> <p>Mitigation Measure 4.13-2c: The Applicant shall install a noise shield that would block the line of sight between the water extraction pump at Camino Diablo Road and the nearest residences, all water extraction activities shall be limited to approved daytime hours, and water tanker trucks shall not idle at the water extraction and delivery sites.</p>	
Impact 4.13-3: Construction, operation, and decommissioning of the Project would expose workers to aircraft overflight noise.	Less than Significant	None required.	
Population and Housing			
Because implementation of the Project would cause no impact on population or housing, there are no impacts and no mitigation measures to be analyzed in this section.			
Public Services			
Because implementation of the Project would result in no impacts related to public services, there are no impacts and no mitigation measures to be analyzed in this section.			
Recreation			
Because implementation of the Project would result in no impact on recreation, there are no impacts or mitigation measures to be analyzed in this section.			

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Transportation/Traffic			
<p>Impact 4.17-1: Project construction activities would intermittently and temporarily increase traffic congestion on area roadways due to vehicle trips generated by construction workers and construction vehicles.</p>	<p>Less than Significant with Mitigation</p>	<p>Mitigation Measure 4.17-1: Prior to the start of construction-related activities, the Applicant shall prepare and implement a Traffic Management and Safety Plan that will reduce or eliminate impacts associated with the Project. The plan shall adhere to Contra Costa County and Caltrans requirements, and must be submitted for the review and approval of the Contra Costa County Public Works Department prior to implementation. In preparing this plan, the Applicant shall take into account the cumulative traffic impacts of the overlapping construction schedules of the Contra Costa County's Vasco Road Safety Improvements Project, the Vasco Winds Repowering Project, and any other projects in the area that could combine with the Project to create cumulative traffic impacts. The traffic management plan shall include, at a minimum, the following elements:</p> <p>Part A - Scheduling and Delivery Requirements. To the maximum extent feasible, schedule Project-related construction truck trips on Vasco Road, State Route 4, and State Route 4 Bypass outside the peak morning and evening commute hours. Restrict slow-moving trucks to nighttime deliveries if required by the Contra Costa County Public Works Department or other agency, such as Caltrans, the California Highway Patrol, the State Route 4 Bypass Authority or the Alameda County Public Works Department, that has jurisdiction over a portion of the haul route. Implement road closures during delivery of oversized loads as directed by any agency with jurisdiction over the haul route.</p> <p>Part B - Permits. Comply with transportation permit requirements of the Contra Costa County Public Works Department, Caltrans, the California Highway Patrol, the State Route 4 Bypass Authority, and the Alameda County Public Works Department for Project-related construction truck trips carrying oversized loads. Implement a road closure in Contra Costa County by submitting a road closure approval request to the Contra Costa County Public Works Department at least two months prior to the planned closure. Contact the other agencies listed above regarding authorization for road closures within their jurisdictions and submit copies of road closure requests within those jurisdictions to the Contra Costa County Public Works Department.</p> <p>Part C - Coordination with County Projects. Coordinate Project-related construction activities with activities related to Contra Costa County projects on Vasco Road. Contra Costa County projects, such as the Vasco Road Safety Improvements Project, shall have priority access at all times, and the delivery of oversized equipment and other heavy equipment shall be scheduled around Contra Costa County projects, which might limit the delivery hours.</p> <p>Part D - Emergency Services Notification. Provide a minimum of five days advance notification to local police, fire, and emergency service providers of the timing, location, and duration of construction activities that could affect the movement of emergency vehicles on area roadways. The names and 24-hour contact numbers of the Project superintendent and foreman shall be included as part of the advance notification. The County Public Works Department's resident engineer(s) for Vasco Road projects shall also be provided with the advance notification.</p>	<p>Less than Significant</p>

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Transportation/Traffic (cont.)			
Impact 4.17-1 (cont.)		Part E - Signage. Place signs along appropriate roads throughout the duration of the construction period to notify drivers of the presence of construction traffic. At a minimum, signs shall be placed along Vasco Road, SR 4, SR 4 Bypass, and Camino Diablo.	
Impact 4.17-2: Project construction activities could substantially increase traffic hazards due to construction in or adjacent to roads or due to possible road wear.	Less than Significant with Mitigation	<p>Mitigation Measure 4.17-2a: Where needed to maintain safe driving conditions, traffic control devices and procedures shall be installed/implemented as specified in Caltrans' <i>California Manual on Uniform Traffic Control Devices, Part 6: Temporary Traffic Control</i>. The Applicant shall submit a plan for temporary traffic control to the Contra Costa County Public Works Department for review and approval prior to implementation. This plan may be part of the Traffic Management and Safety Plan required by Mitigation Measure 4.17-1. If directed to do so by any agency that has jurisdiction over a right-of-way that would be impacted by the Project, the Applicant shall submit a temporary traffic control plan or its equivalent to that agency for review and approval.</p> <p>Mitigation Measure 4.17-2b: The Applicant shall be responsible for repairing all damage to County roads resulting from construction activities. Prior to issuance of grading, building, or encroachment permits, the Applicant shall prepare a plan for mitigating construction-related damage to County roads. The plan shall be submitted for the review and approval of the Contra Costa County Public Works Department and shall include, at minimum, the following elements:</p> <p style="padding-left: 20px;">Part A - Haul Routes. Indicate County roads to be used as haul routes. An exhibit shall be provided that shows haul routes and county lines.</p> <p style="padding-left: 20px;">Part B - Road Survey and Monitoring. Perform pre- and post-construction surveys of the approved haul routes in order to document their condition before and after Project construction. Monitor roads during Project construction to identify any damage that requires immediate repair.</p> <p style="padding-left: 20px;">Part C - Financial Security. Provide a security, such as a bond or other acceptable instrument, to ensure that funding is available to undertake any necessary road repairs. The Applicant shall calculate the amount of the required security and submit the calculation to the Contra Costa County Public Works department for review and approval.</p> <p>Mitigation Measure 4.17-2c: If any severe road damage results from construction activities, especially damage that would make the impacted road unsafe to the public, then the Applicant shall complete necessary repairs immediately, per the direction either the Contra Costa County or Alameda County Public Works Department depending on the agency having jurisdiction over the damaged road segment. Emergency road repairs shall be completed at the Applicant's expense. Any potentially hazardous road segment must be flagged until the road is repaired.</p>	Less than Significant
Impact 4.17-3: Project construction activities would intermittently and temporarily interfere with response times for emergency service providers using area roadways.	Less than Significant with Mitigation	Mitigation Measure 4.17-3a: Comply with stipulations of Mitigation Measure 4.17-1 – Part A pertaining to the scheduling of Project-related construction truck trips on Vasco Road, State Route 4, and State Route 4 Bypass outside the peak morning and evening commute hours, and restricting delivery of oversized loads (and related road closure) to nighttime hours if directed by any agency with jurisdiction over the haul route.	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE TRES VAQUEROS WINDFARM REPOWERING PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Transportation/Traffic (cont.)			
Impact 4.17-3 (cont.)		<p>Mitigation Measure 4.17-3b: Comply with Mitigation Measure 4.17-1 – Part D to ensure that the East Bay Regional Park District, local police, fire, and emergency services providers receive adequate advance notice of road closures.</p> <p>Mitigation Measure 4.17-3c: To ensure access for emergency vehicles to the Project area (including Vasco Caves Regional Preserve), and through the Project area, shall be maintained open at all times.</p>	
Utilities and Service Systems			
Impact 4.18-1: The Project would require or result in the construction of new storm water drainage facilities, the construction of which could cause significant environmental effects.	Less than Significant	None required.	
Impact 4.18-2: Project construction would temporarily increase the flow of solid waste to area landfills.	Less than Significant	None required.	
Cumulative Impacts			
Impact 5-1: The Project would make a cumulatively considerable contribution to adverse effects on scenic vistas in the Project area.	Significant and Unavoidable	The combined impact of the Project and the Vasco Winds Repowering Project on aesthetics/visual resources would be significant and unavoidable. No additional mitigation is feasible.	Significant and Unavoidable
Impact 5-2: Construction associated with the Project would result in short-term emissions of criteria pollutants that would be cumulatively considerable.	Significant and Unavoidable	The Project-specific construction impact related to NOx emissions, when combined with NOx emissions of other projects would be significant and unavoidable. No additional mitigation is feasible.	Significant and Unavoidable
Impact 5-3: The Project would cause a cumulatively considerable contribution to a significant adverse cumulative impact on avian and bat species.	Significant and Unavoidable	No additional mitigation is feasible. <u>The Applicant shall provide, within reason, Project area access to qualified third parties over the life of the Project for the purpose of conducting additional monitoring or studies beyond those required in the EIR.</u>	Significant and Unavoidable
Impact 5-4: Construction of the Project, when combined with construction of other projects, could contribute to short-term cumulative impacts to traffic and transportation (traffic congestion, traffic safety, and pavement wear-and-tear).	Less than Significant with Mitigation	Mitigation Measure 5-4: The Project-specific less-than-significant contribution to transportation and traffic impacts would not be cumulatively considerable.	Less than Significant

3.2.4 Chapter 3, Project Description

The County has made the following changes to Figure 3-2b in the DEIR to show the revised approximate area of Tres Vaqueros wind rights, as well as utility easements within the Project Area. Note that Tres Vaqueros wind rights are not severed by those easements and that the Project would not construct wind turbines within those easements.

Replace page 3-6 of the DEIR with the revised Figure 3-2b, as shown on the following page.

The Project would result in approximately 9.1 miles of new roads and 2.4 miles of improved roads, and new turbines would be surrounded by pads approximately 75 feet in diameter. All calculations pertaining to disturbed acreages were made using these figures, and thus no changes need to be made to the analyses in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures. To be consistent, the following corrections have been made to the DEIR:

Page 3-14, top paragraph:

The pad for each turbine would encompass an approximately ~~11475~~-foot diameter circle (~~40,351~~ 4,418 square feet) surrounding the turbine.

Page 3-22, third paragraph:

The Project would include approximately ~~98.1~~ miles of newly constructed access roads, turbine string roads and turn-around areas, as well as ~~2.24~~ miles of existing roads requiring improvement.

Page 3-27, Table 3-4:

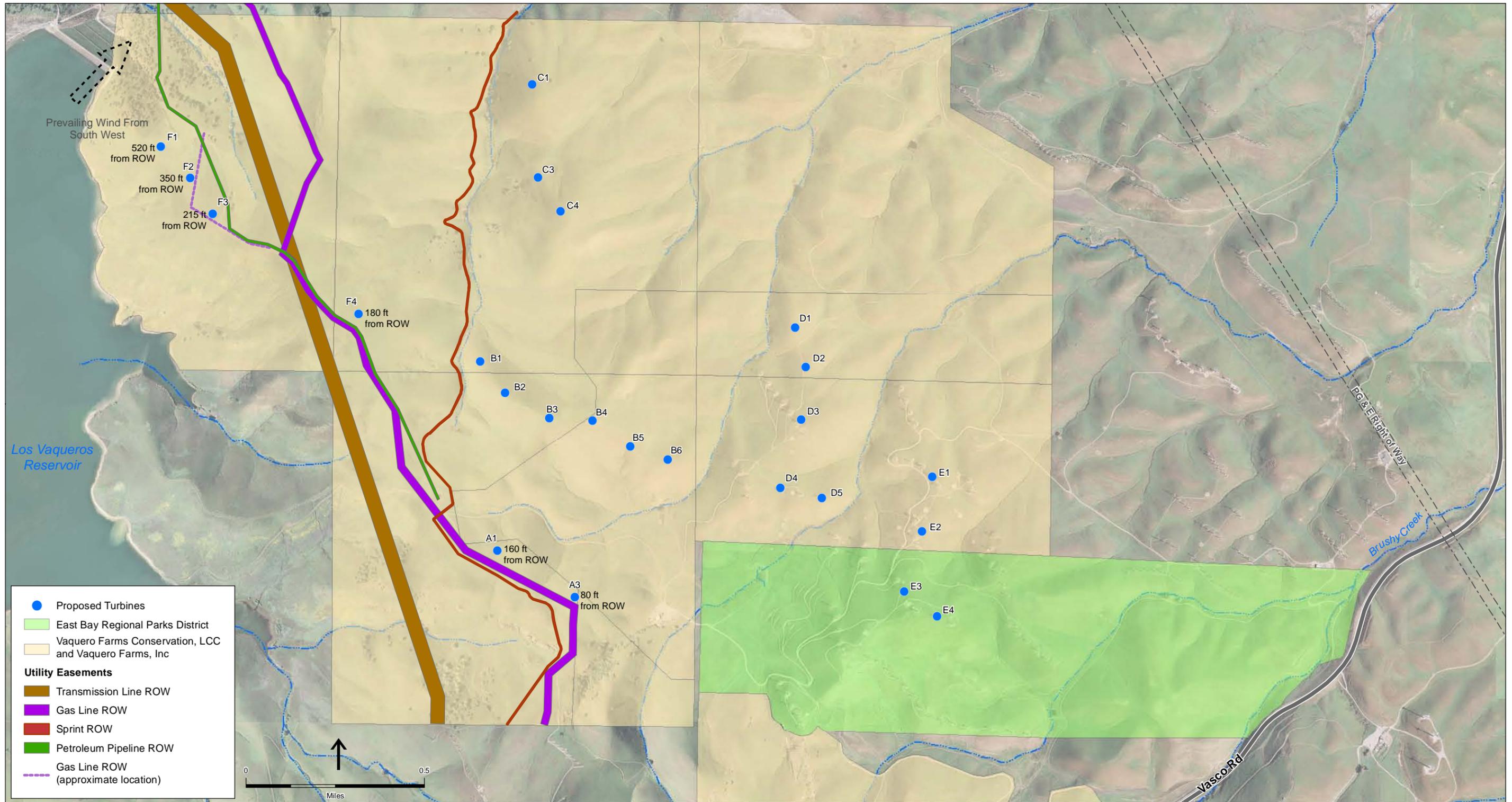
Facilities ^a	Approximate No. of Units	Approximate Total Disturbance Area (acres)	
		Temporary	Permanent
Turbine Pads/Towers (75' diameter around turbine; 4' x 100' crane pad)	21	5.8	2.3
Roads, New	<u>9.1</u> miles	29.4	14.7
Roads, Improved	2.45 miles	5.1	1

3.2.5 Chapter 4, Environmental Setting, Impacts and Mitigation Measures

4.1 Aesthetics

On page 4.1-53, first paragraph under Impact 4.1-5:

As discussed in Chapter 3, *Project Description*, the Project is located entirely on ~~private property and~~ public property with restricted public access.



SOURCE: PERMCO, 2010; County of Contra Costa, 2009

Notes: 1. Locations are approximate.
 2. While 24 turbine site locations are shown, only 21 turbines will be installed

Tres Vaqueros Windfarm Repowering Project . 209132.02
Figure 3-2b (REVISED)
 Ownership of Wind Rights with the Repowered Project

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4.2 Agriculture and Forestry Resources

No change.

4.3 Air Quality

No change.

4.4 Biological Resources

The County has determined from the evidence provided that, in fact, the conservation easement was never recorded. Therefore, the following language has been stricken from DEIR Section 4.4, Biological Resources:

Page 4.4-3, first bullet:

- San Joaquin Kit Fox and Bald Eagle BO:* Protective measures contained in the BO require protecting, in perpetuity, a specified amount of San Joaquin kit fox habitat within and outside the Watershed; abiding to a recreation plan that addresses impacts on these species; and implementing a bald eagle monitoring program. This BO states that additional development under existing wind energy leases may proceed under the County's permitting process and that designation of compensation lands will not affect the use of lands for wind energy. The Project boundary overlaps 1,449 acres of CCWD lands, with 196 acres occurring within proposed ~~or conveyed~~ San Joaquin kit fox conservation easements. Six acres within the easements would experience disturbance as a result of ~~p~~Project activities, with five acres temporarily disturbed and one acre permanently disturbed.

Page 4.4-59, second paragraph:

Grasslands are the principal habitat used by San Joaquin kit foxes for denning, foraging, and dispersal. Grassland habitats would be the primary vegetation community affected by Project construction and operation, which would permanently impact 18 acres of annual grassland habitat and temporarily impact 93 acres of grassland habitat. Of the total acres of impacted grassland habitat, Project construction would result in 6 acres of disturbance within proposed ~~or conveyed~~ San Joaquin kit fox CDFG conservation easement areas (five acres of temporary disturbance and one acre of permanent disturbance). Grassland habitat within this area would be reclaimed/restored during Project implementation.

Page 4.4-61, second full paragraph:

~~**Mitigation Measure 4.4-6c:** To maintain under conservation easement the full acreage required for the original Los Vaqueros Reservoir Expansion Project, the Applicant shall replace any affected acreage of existing kit fox easement with an equivalent amount of acreage. The Applicant shall provide compensation for permanently affected conservation easement acreage at a 1:1 ratio **or a higher ratio if required by USFWS or CDFG** during the permitting process. Compensation for temporary impacts to lands within conservation easements shall be provided at a ratio of 1:1 **or a higher ratio if**~~

~~required by USFWS or CDFG. A “higher ratio” may result in a less than 1 square foot by 1 square foot replacement on the ground if higher quality habitat than that affected by the Project is obtained. Compliance with required mitigation ratios shall be verified by the USFWS and CDFG. Temporarily impacted areas shall be reseeded with native species as described in the General Biological Resources Mitigation Measures.~~

The County has made the following correction to DEIR Section 4.4, Biological Resources, page 4.4-4:

Since ~~2005~~ 2009, the EBRPD has acquired lands to manage and preserve as part of the East County HCP, and has also acquired lands to expand their regional preserves.

The title of Figure 4.4-5 (DEIR page 4.4-37) has been changed for clarification as follows:

~~Special-Status Bird Occurrences~~ Nesting Occurrences of Special-Status Birds in the Project Area.

The following changes are made to correct an inconsistency in dates between the text of the DEIR and Appendix D2. On page 4.4-19 the following change is made.

4.4.3 Project Baseline

A comparison of pre- and post-Project avian and bat fatality rates is used to assess the potential Project-related change in avian and bat fatalities. Based on pre-Project site-specific data, the fatality baselines for avian and bat species are presented in Table 4.4-2. Baseline fatality estimates incorporate APWRA-wide data from other older-generation wind turbines throughout the APWRA in order to represent fatality rates that were likely caused by the existing Tres Vaqueros Howden turbines prior to their operational decline over the period of 2005~~4~~ through 2009 (Smallwood, 2010a). This report is included as Appendix D-2.

The following references to private property in DEIR Chapter 4, have been corrected as follows.

Page 4.4-35, bullet 15:

All Project-related vehicles shall observe a maximum 20 miles per hour speed limit on ~~private~~ roads within the Project area.

Page 4.4-73, second paragraph under Impact 4.4-13:

Project traffic may pose a higher risk of road mortality on ~~private~~ Project area roads.

Page 4.4-73, third paragraph under Impact 4.4-13:

Adhering to speed limits, the likelihood for Project traffic to reduce overall traffic speeds on Vasco Road, and the reduced likelihood for traffic on Project area ~~private~~ roads during rainy periods would adequately reduce potential mortality risks to wildlife species.

On page 4.4-44, Mitigation Measure 4.4-1b(ii) is amended as follows:

- ii. The post-construction monitoring program shall be 3 years in duration. Following the 3 years of post-construction monitoring, 2 years of further monitoring shall commence on the 10th anniversary of the Project's commercial operation date. The initial 3-year monitoring period and the subsequent 2-year monitoring period together shall constitute the post-construction monitoring period. At the County Zoning Administrator's discretion, the initial 3-year monitoring period can be extended by administrative action to 5 years.

On page 4.4-44, Mitigation Measure 4.4-1b(v) has been revised as follows:

- v. The program shall monitor for fatalities and conduct bird utilization and behavior studies at each repowered turbine at least once per month for the duration of the post-construction monitoring period ~~for fatalities of the Focal Raptor Species and~~ all other bird species, as recommended by the Contra Costa County Technical Advisory Committee (TAC) or an equivalent entity, which will be convened by the County for this purpose. The Applicant shall monitor a subset (30 percent) of the repowered turbines at least twice per month for the duration of the post-construction monitoring period for fatalities and bird utilization and behavior.

On page 4.4-47, DEIR Mitigation Measure 4.4-2(ii) has been revised as follows:

- ii. In accordance with Mitigation Measure 4.4-7, the Project construction area will be reduced to the smallest possible area. In accordance with General Biological Resources Mitigation Measure 6, the Applicant shall ensure that habitat disturbances and all Project activities are restricted to the work area identified in the final site plan approved by the County Zoning Administrator. In accordance with General Biological Resources Mitigation Measure 7, construction personnel shall be restricted to the immediate construction area and shall not venture beyond the work area identified in the approved final site plan. The work area boundary shall be ~~Construction exclusion areas (e.g., marked with orange exclusion fence or silt fence and signage.) shall be established around occupied burrows, where n~~No disturbance shall be allowed around occupied burrows except as specified below. During the non-breeding season (September 1 through January 31), exclusion areas shall extend at least 160 feet (approximately 50 meters) around occupied burrows. During the breeding season (February 1 through August 31), exclusion areas shall extend at least 250 feet (approximately 75 meters) around occupied burrows.
- a. During the breeding season (February 1 through August 31), no-disturbance areas shall extend at least 250 feet (approximately 75 meters) around occupied burrows. If construction areas conflict with occupied burrows, occupied burrows shall not be disturbed unless a qualified, County- and CDFG-approved biologist verifies through non-invasive methods that either the birds have not begun egg-laying and incubation, or that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

- b. During the non-breeding season (September 1 through January 31), no-disturbance areas shall extend at least 160 feet (approximately 50 meters) around occupied burrows. If construction work areas conflict with occupied burrows in construction exclusion areas, passive relocation techniques could be used with CDFG approval. The approach to owl relocation and burrow closure will vary depending on ~~the number of~~ whether occupied burrows occur within proposed construction areas or outside construction areas but within 160 feet. Passive relocation shall be accomplished, consistent with CDFG guidance (CDFG, 1995), by:
2. Installing one-way doors on the entrances of burrows within 160 feet of the work site. The one-way doors shall be left in place for at least 48 hours to ensure owls have left the burrow and the area shall be monitored daily for one week to confirm owl use of the replacement burrows before formerly-occupied burrows may be excavated. Burrows outside of the Project footprint (i.e., the active construction area) but within 260 feet will be covered, rather than excavated, when a burrow can be effectively covered so there is no risk of subsequent occupation by a burrowing owl during construction; covers shall be removed when construction is completed. If excavation is necessary, Burrows shall be excavated with a qualified biologist present.
- c. Unoccupied burrowing owl burrows within ~~the construction exclusion area~~ Project footprint (i.e., the active construction area), shall be excavated with a qualified biologist present, and then filled to prevent reoccupation. If any burrowing owls are discovered during the excavation, the excavation shall cease and the owl shall be allowed to escape. Excavation could be completed when the biological monitor confirms the burrow is empty.

4.5 Cultural Resources

No change.

4.6 Energy Conservation

No change.

4.7 Geology and Soils

No change.

4.8 Greenhouse Gas Emissions

No change.

4.9 Hazards and Hazardous Materials

On page 4.9-11, Impact 4.9-3 has been revised as follows:

Impact 4.9-3: Project construction could cause a significant hazard related to accidental rupture of the ~~natural-gas pipelines~~ that crosses the Project area. (*Less-than-Significant Impact with Mitigation Incorporated*)

Construction activities such as excavation and grading for wind turbine foundations and roadways could inadvertently damage the underground PG&E high pressure natural gas pipeline that crosses the Project area (Figure 3.3) in close proximity to a number of proposed wind turbine locations. Several other pipelines cross the Project area carrying petroleum products. The potential consequences of a pipeline rupture include jet flame, radiant heat, flammable vapor cloud flash fire, and unconfined vapor cloud explosion, which could fatally injure construction workers, damage equipment, and initiate a wildland fire.

As described above under *Regulatory Setting*, the construction contractor is required by State law to contact USA North at least two working days prior to initiation of ground-disturbing construction activities. USA North would notify the utility providers in the vicinity of the planned excavations. Each provider would be responsible for marking the location of its underground utilities and coordinating with the contractor to avoid damage. Although this requirement would provide notification to PG&E and other pipeline operators of Project excavation activities, given the Project size, it may not provide sufficient time for PG&E or other pipeline operators to locate and mark the ~~gas~~ pipeline or for the Applicant to develop and incorporate appropriate design changes, if needed, to avoid damage to the utility. If construction affected the underground ~~gas~~ pipeline, it would be a significant impact.

Implementation of Mitigation Measure 4.9-3 would reduce this impact to a less-than-significant level by requiring advance notification and coordination with PG&E and other pipeline operators for protection of the ~~gas~~ pipelines.

Mitigation Measure 4.9-3: At least 30 days prior to commencement of construction activities, the Applicant shall provide ~~PG&E~~ the pipeline operators with the Project construction plans, notify the County that it has done so, and make arrangements with ~~PG&E~~ the pipeline operators to identify underground utilities potentially affected by the Project so that the Applicant can modify its construction plans to avoid utility conflicts. Prior to beginning construction, the Applicant shall make further arrangements with ~~PG&E~~ the pipeline operators regarding protection of the ~~existing-gas~~ pipelines, possibly to include having a ~~PG&E~~ the pipeline operators' monitor present during excavation near the pipelines to ensure that the facilities are not damaged.

Significance of Impact after Mitigation: Less than Significant.

4.10 Hydrology and Water Quality

On page 4.10-6, the first full paragraph has been revised as follows:

Surface Water Quality

Perhaps due to the ephemeral nature of the waterways located on-site, very limited surface water quality data are available for the Project area and its vicinity. However, neither ~~Kellogg Creek~~, Frisk Creek, nor Brushy Creek ~~are is~~ included in the 303(d) list of water quality impaired segments for California (USEPA, 2006CVRWQCB, 2010). Kellogg Creek is included on the 2010 303(d) list, and is considered to be impaired for the following water quality constituents: Escherichia coli (E. coli; unknown source), dissolved oxygen (unknown source), salinity (unknown source), sediment toxicity (unknown source), unknown toxicity (unknown source). Substantial water quality data are available for the Sacramento-San Joaquin Delta, to which both watersheds are tributary. Central Delta waters, into which Kellogg Creek discharges are included on the 303(d) list for the following constituents: Chlopyrifos (agricultural return flows, urban runoff/storm sewers), DDT (nonpoint sourceagriculture), Group A Pesticides (agriculture), invasive species (source unknown), Dieldrin (nonpoint sourcee), dioxins (atmospheric deposition), exotic species (ballast water), furan compounds (atmospheric deposition), mercury (resource extraction), and unknown toxicity (source unknown) (CVRWQCB, 2010USEPA 2010), nickel (unknown sourcee), polychlorinated biphenyls (PCBs; nonpoint sourcee), and selenium (industrial, agricultural and other sources) (USEPA, 2006).

The text on DEIR page 4.10-7, top paragraph, has been corrected as follows:

As ~~shown in Table 3-7~~ discussed in Chapter 3, *Project Description* (page 3-22), construction of the proposed Project would require the use of a total of approximately 8.4 million gallons of water.

DEIR pages 4.10-15 to 4.10-16:

- a) **Would the Project violate any water quality standards or waste discharge requirements?**

Impact 4.10-1: The Project could violate a water quality standard during operations, or result in other water quality degradation during operations. ((Less-than-Significant Impact with Mitigation Incorporated)

Construction, operation and decommissioning of the Project would not violate any waste discharge requirements because no facility-specific NPDES permit is likely to be required. Potential construction- and decommissioning-related water quality impacts are analyzed under Impact 4.10-3. However, as analyzed below, operation of the Project could violate water quality standards.

In support of Project operations, fuels, oils, lubricants, and other hazardous chemicals and potential water quality pollutants would be stored off-site. Small amounts of these and other operational chemicals would, however, be brought on-site in order to support maintenance of the wind turbines, substation, and other equipment. Chemicals used for

these purposes include transformer oils, which typically include fluorinated hydrocarbons, silicone-based oils, and/or biodegradable esters. Similarly, wind turbines require various lubricants and greases in order to function properly, and the use of maintenance equipment, including cranes, trucks, and transport vehicles requires on-site usage of fuels, oils, greases, and other fluids.

Accidental spill or release of these or other equipment-related water quality pollutants could result in a reduction of water quality on-site. Specifically, these chemicals could leach into soils and affect groundwater, or into water bodies on-site (ponds, streams) during rain storms, causing degradation of receiving water quality. As discussed previously, Kellogg Creek below Los Vaqueros Reservoir, to which project areas are tributary, is included on the 2010 303(d) list for dissolved oxygen, salinity, sediment toxicity, and unknown toxicity. Pollution released from accidental spills on-site, if left unmitigated, could potentially contribute to the impairments along Kellogg Creek, and those described for the Delta, further downstream. This impact is considered potentially significant; however, implementation of Mitigation Measure 4.10-1 would reduce this effect to a less-than-significant level.

As discussed previously, lower Kellogg Creek is also included on the current 303(d) list if impaired water bodies for E. coli. E. coli is a bacteria commonly associated with human or animal feces. Implementation of the Project would not result in any changes to on-site ranching activities, and would not result in the discharge of untreated human wastes into surface water bodies. Therefore, implementation of the Project would not result in any change or increase in E. coli levels.

Potential impacts to water quality as a result of construction-related stormwater pollutants, including during the construction period, are discussed in Impact 4.10-3. Potential changes in water quality related to drainage on-site are discussed in Impact 4.10-4.

DEIR pages 4.10-17 to 4.10-18:

Impact 4.10-3: Project construction and operation could alter drainage patterns on-site in a manner which could result in erosion, sedimentation, or flooding on-site or off site. (*Less-than-Significant Impact with Mitigation Incorporated*)

Erosion and Sedimentation

Construction of the Project would include the use of heavy machinery, including but not limited to transport trucks, bulldozers, graders, backhoes, and cranes. Use of these and similar types of heavy machinery would cause disturbance to surface sediments, loosen soils, remove existing vegetation, and potentially result in increased erosion on-site. During large storm events, eroded soils could become entrained in stormwater, and could cause sedimentation on-site or downstream, including along Project area waterways. At the staging areas (approximately 3 acres,) and laydown areas (the existing O&M building would be razed and the area of the building and the parking lot would be used as the

laydown area) also could generate substantial sediment loads during storm events, if improperly managed. Increases in sediment loading, if left unmanaged, could potentially contribute to water quality impairments along downstream reaches of Kellogg Creek and the Delta. During Project operations, if improperly managed, stormwater control measures along the proposed roadways, substation, and other proposed facilities could result in the discharge of stormwater into inadequately sized drainages, or in a manner that would result in additional erosion and sedimentation. The Project would include removal of some existing roadways which, as discussed, currently create various erosion-related problems in some areas. If reclaimed roadways are not properly managed, additional erosion could occur. Installation the proposed new roads, stream crossings/culverts, wind turbines, upgraded power substation, temporary trenches for on-site power lines, the new O&M building, and other proposed facilities, as well as temporary facilities such as crane pad and laydown areas, would involve digging, grading, and earth-moving. If improperly managed, these activities could result in changes in drainage patterns on-site, which could lead to increased incidence of erosion, sedimentation, and flooding on-site or downstream. For instance, unless properly managed, stormwater runoff along new roadways could cut erosional channels, resulting in erosion along the roadways, and sedimentation downstream.

For the construction period, the Project would be required to acquire coverage under the County's General Construction NPDES Permit issued by the CVRWQCB. As discussed previously, conditions of this permit would require adherence to a series of Best Management Practices, as well as other measures, to control potential erosion and sedimentation and address water quality issues associated with Project construction. To ensure that stormwater control facilities were designed to minimize erosion and sedimentation, implementation of Mitigation Measures 4.10-3a and 4.10-3b also would be required.

DEIR pages 4.10-18 to 4.10-19:

Mitigation Measure 4.10-3a: To control and manage stormwater runoff during construction and decommissioning, the Applicant shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) as required under the General Construction Permit for Discharges of Stormwater Associated with Construction Activities, for all construction and decommissioning phases of the Project. The SWPPP shall identify pollutant sources that may affect the quality of stormwater discharge and shall require implementation of Best Management Practices (BMPs) to reduce pollutants in stormwater discharges.

BMPs shall include, but would not be limited to:

1. Excavation and grading activities in areas with slopes greater than 30 percent or directly adjacent to open water shall, ~~to the extent possible,~~ be conducted during the dry season (April 15 to October 15). If excavation and grading activities for other areas must performed during the wet season (October 15 to April 15), they shall be conducted in accordance with County requirements and the requirements

of the General Construction Permit for Discharges of Storm Water Associated with Construction Activities.

2. If excavation occurs during the rainy season, storm runoff from the construction area shall be regulated through a storm water management/erosion control plan that shall include temporary on-site silt traps and/or basins with multiple discharge points to natural drainages and energy dissipaters. Stockpiles of loose material shall be covered and runoff diverted away from exposed soil material. If work stops due to rain, a positive grading away from slopes shall be provided to carry the surface runoff to areas where flow would be controlled, such as the temporary silt basins. Sediment basins/traps shall be located and operated to minimize the amount of off-site sediment transport. Any trapped sediment shall be removed from the basin or trap and placed at a suitable location on-site, away from concentrated flows, or removed to an approved disposal site.
3. Temporary erosion control measures (such as fiber rolls, staked straw bales, temporary silt fences and straw-filled wattles, detention basins, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) shall be provided until perennial revegetation or landscaping is established and can minimize discharge of sediment into nearby waterways. For construction within 500 feet of a water body, appropriate erosion control measures shall be placed between the potential source of sediment and the water body.

DEIR pages 4.10-20 to 4.10-21:

Mitigation Measure 4.10-3b: Prior to issuance of grading or building permits and initiation of construction activities for the Project, the Applicant shall ~~complete~~ prepare a Drainage Management Plan. The plan shall be submitted to the Contra Costa County Flood Control and Water Conservation District for review and approval as part of the Flood Control District's issuance of a Drainage Permit, as required by the County's 1010 Drainage Ordinance. ~~and the~~ The Applicant shall be required to implement and adhere to the plan approved by the reviewing agency ~~plan~~. The plan shall include measures necessary to ensure that stormwater drainage from the proposed roadways, new substation, and other facilities is channeled into appropriately-sized drainage ditches, channels, culverts, stormwater retention ponds, and/or stormwater infiltration facilities. The plan shall require that all new or modified facilities are designed so as to ensure no net increase in stormwater discharge rates, flow velocities, or sediment transport would result from Project implementation, and that discharges from these facilities are designed so as to avoid concentrating of flow and subsequent downstream scouring or sedimentation. Proposed roadways shall be designed so as to ensure that potential for slope failure and erosion is minimized. The following additional features shall also be included:

- a. Energy dissipating features shall be utilized at culvert outfalls and steep downslopes, as warranted.
- b. Ditches shall be constructed and maintained as flat-bottomed ditches, where applicable.

- c. Use of culverts shall be minimized; culverts shall be used only in areas where existing roads with culverts are widened, or new alignment of existing roads are required which cross existing ditches/ephemeral streams.
- d. Wherever possible, at-grade crossings shall be constructed where roads intersect drainageways.
- e. Culverts shall be placed at a skew angle to the road.
- f. New roads shall be constructed and maintained with an out-sloped roadway cross section.
- g. Prior to initiation of construction, the Applicant shall identify erodible soils during geotechnical field investigations, to the extent practicable, in support of erosion control BMP application.
- h. On-site grading and drainage plans shall be designed to minimize channel flow to the maximum extent practicable.
- i. Drainage and erosion control BMPs shall be applied, as warranted, including but not limited to:
 - i. Rip-rap in channels;
 - ii. Coarse road rock to encourage sheet flow across roads;
 - iii. Erosion control blankets;
 - iv. Use of buffer-strip BMPs
- j. Operations crews shall be trained by the Applicant to identify and repair drainage and erosion related problems.

The Drainage Management Plan shall be incorporated into all design drawings and specifications as appropriate.

DEIR pages 4.10-21 to 4.10-22 have been revised as follows:

Impact 4.10-4: The Project could create or contribute additional runoff water, which could exceed the capacity of drainage systems, and could create additional sources of polluted runoff. (*Less-than-Significant Impact with Mitigation Incorporated*)

Approximate disturbance and restoration acreage associated with Project components is presented in Project Description Table 3-4. Project implementation would result in the permanent disturbance of 11 acres, temporary disturbance of 93.1 acres, and restoration of 29.1 acres. Overall, there would be no net increase of impervious surfaces. Impervious surfaces include paved roadways, concrete transformer and turbine pads/foundations, and other areas that do not permit the infiltration of stormwater. During a storm event, impervious surfaces generate additional stormwater runoff, as compared to pervious surfaces. If improperly managed, this additional stormwater runoff could be channeled into

existing drainages and natural waterways, contributing to or exacerbating flooding on-site and downstream of the impervious surfaces.

These roadways are to be composed of gravel and, as such, are not considered impervious surfaces. However, the proposed unpaved roadways would be hard-compacted; while not classified as impervious, would still result in reduced permeability for stormwater infiltration, as compared to existing conditions. Therefore, during a storm event these surfaces could generate additional stormwater runoff, as compared to existing surfaces. If improperly managed, this additional stormwater runoff could be channeled into existing drainages and natural waterways, contributing to or exacerbating flooding on-site and downstream. Additionally, the proposed roadways could collect oil, grease, brake dust, sediment, and other potential pollutants deposited by maintenance vehicles. During a storm, especially during the first major storm of the season, these potential pollutants can become entrained in stormwater, migrate into natural waters, and result in water quality degradation on-site or downstream. These impacts, including potential increases in the volume of stormwater discharged from the Project area, and potential increases in pollutants emanating from the proposed roadways, are potentially significant. Discharges of pollutants into downstream waterways could contribute to unknown toxicity along lower Kellogg Creek and the Delta, if left unmitigated. However, implementation of Mitigation Measures 4.10-3a and 4.10-3b would reduce these impacts to less-than-significant levels.

The influx of vehicles and equipment at the Project area during construction, along with the construction processes themselves, would increase the likelihood of accidental releases of fuels, oils, lubricants, antifreeze, and other hazardous fluids and compounds into the environment. During storm events, these pollutants could become entrained in stormwater flows and degrade water quality downstream, potentially contributing to unknown toxicity along lower Kellogg Creek and the Delta, if left unmitigated. Discharges from the temporary cement plant identified in Chapter 3, *Project Description*, including truck washout and other concrete washout, would be channeled into an on-site, aboveground settling pond. If improperly managed, pollutant-containing water accidentally could be released from this pond. Such releases could become entrained in natural waterways, resulting in degradation of downstream water quality. The construction-related impacts to water quality are potentially significant, but would be mitigated to less-than-significant levels through implementation of Mitigation Measures 4.10-3a and 4.10-3b. For a discussion of potential releases of hazardous materials during construction, and the potential for exposure of Project workers, personnel, and the public at large to such chemicals, please refer to Section 4.9, Hazards and Hazardous Materials, Impact 4.9-1.

4.11 Land Use and Planning

The third paragraph in the right hand column of the table on page 4.11-7, has been revised as follows:

~~Although the~~ The Project area is located in East County HCP/NCCP Inventory Area Subzone 5, ~~it is not a part of the Preserve system. Nonetheless, i~~Implementation of the Project is expected to restore at least 29 acres...

4.12 Mineral Resources

No change.

4.13 Noise

No change.

4.14 Population and Housing

No change.

4.15 Public Services

No change.

4.16 Recreation

No change.

4.17 Transportation/Traffic

The County has made the following correction to the second sentence of the second paragraph under Impact 4.17-1 in DEIR Section 4.17, Transportation/Traffic, page 4.17-11, to be consistent with DEIR Chapter 3, Project Description.

“Hours of construction typically would be between ~~7:00~~ 8:00 a.m. and ~~7:00~~ 5:00 p.m. Monday through Friday; if extended hours are necessary or desired, the Applicant would seek approvals from the County and from 8:00 a.m. to 6:00 p.m. on Saturdays and Sundays.”

4.18 Utilities and Service Systems

No change.

3.2.6 Chapter 5, Other CEQA Considerations

On page 5-18, Mitigation Measure 5-3 is revised as follows:

Mitigation: ~~No additional mitigation is feasible.~~ The Applicant shall provide, within reason, Project area access to qualified third parties over the life of the Project for the purpose of conducting additional monitoring or studies beyond those required in the EIR.

3.2.7 Chapter 6, Alternatives Analysis

The first paragraph on DEIR page 6-12 is revised as follows:

Energy Conservation

Alternative 1 would have the same impacts as the Project during decommissioning. Construction-phase energy usage would not occur, which would be a beneficial impact. Furthermore, removal of the existing turbines would reduce current downwind impacts on wind energy generation at the nearby Northwind facility, which would also be a beneficial impact. However, because all existing turbines would be removed, Alternative 1 would have an adverse effect on long-term energy conservation efforts because the lost renewable generation capacity would have to be made up by some other source or combination of sources that would have to be constructed elsewhere in the California energy grid.

The second paragraph on DEIR page 6-14 is revised as follows:

Energy Conservation

Alternative 2 would have the same impacts as the Project during the decommissioning and removal of the existing turbines but would also tend to have reduced impact on construction energy usage due simply to the reduced number of turbines to be installed, potentially shorter construction schedule, and reduced infrastructure. Depending on placement of this reduced number of turbines, there would likely tend to be reduced downwind impacts on wind energy generation at the nearby Northwind facility, which would also be a beneficial impact. Because fewer turbines would be installed than the Project, Alternative 2 would have a negative effect on energy conservation because of the lesser amount of wind-generated energy.

3.2.8 Chapter 7, Report Preparation

No change.

3.2.9 Chapter 8, Glossary and Acronyms

No change.

3.2.10 Chapter 9, References

The following references on DEIR page 9-15 have been revised as follows:

Central Valley Regional Water Quality Control Board (CVRWQCB), 2009. *Fourth Edition of the Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins*. Updated September 4, 2009.

Central Valley Regional Water Quality Control Board (CVRWQCB), 2010. 2010 Integrated Report (Clean Water Act Section 303(d) List/305(b) Report). Available at: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml Accessed on July 11, 2011.

CH2MHill, 2002. Contra Costa Water District Sanitary Survey Update, prepared for Contra Costa Water District, May 2002.

Contra Costa County, 2010. *Contra Costa County General Plan 2005-2020*. Published January 18, 2005; reprinted July 2010.

Contra Costa Water District (CCWD), 2009. *Los Vaqueros Reservoir Expansion Project, Environmental Impact Statement, Environmental Impact Report*. State Clearinghouse No. 2006012037, February, 2009. Available at: <http://www.lvstudies.com/documents.asp> Accessed on April 12, 2010.

California Department of Water Resources (DWR), 2003. *California's Groundwater, Bulletin 118, Update 2003* California Department of Water Resources.

~~US Environmental Protection Agency (USEPA), 2006. 2006 Clean Water Act List of Water Quality Limited Segments Requiring TMDLs. Available at: http://www.swreb.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/state_06_303d_reqtmdls.pdf Accessed on April 12, 2010.~~

US Geological Survey (USGS), 2010. *Groundwater Levels for the Nation*. Online Database. Available at: <http://nwis.waterdata.usgs.gov/nwis> Accessed on April 12, 2010; Well numbers: USGS 374708121460101 002S002E04M001M; USGS 374816121443601 001S002E34F001M; USGS 374817121442501 001S002E34G001M; USGS 374827121442101 001S002E34B001M

3.2.11 Appendices

Appendix D-4 has been updated in the FEIR to include another micro-siting report, *Siting Repowered Wind Turbines to Minimize Raptor Collisions at Tres Vaqueros*, Contra Costa County, California dated December 22, 2010.

Siting Repowered Wind Turbines to Minimize Raptor Collisions at Tres Vaqueros, Contra Costa County, California

Report to Pattern Energy

K. Shawn Smallwood and Lee Neher

22 December 2010

Pattern Energy is considering repowering its Howden wind turbines with modern turbines in the Tres Vaqueros project. We assessed an earlier wind turbine siting plan for collision hazards to golden eagle, red-tailed hawk, American kestrel, and burrowing owl,⁴ but Pattern Energy expanded the project area and decided to use a larger wind turbine. Pattern Energy asked us to expand our Fuzzy Logic models from the original study area to the expanded area to assess alternate wind turbine siting, and to recommend micro-siting to minimize raptor collision risk. We were also asked to assess collision hazard levels of individual wind turbines, and to compare project-wide annual fatalities with and without turbines rated high for collision hazard. In other words, we were asked to quantify how much difference it would make to individual raptor species should particular wind turbines not be installed where currently planned. Finally, we were asked to compare fatality rates of key raptor species before and after repowering, where the before conditions represented the 330 KW Howden turbines during peak operations and the after conditions represent the planned installation of Siemens 2.3 MW turbines.

METHODS

We relied on the Fuzzy Logic models that we developed for Vasco Caves Regional Preserve (Smallwood and Neher 2010). The similarity of the landscape of the expanded area to that of Vasco Caves justified our model projections, as did the overlap and adjacency between the Tres Vaqueros project area and the Vasco Caves study area. To project our models, however, we performed the same geo-processing steps that we used in the Vasco Caves study area. Once the geo-processing steps were completed, we measured slope attributes as we did in the original study area, and then we derived variables leading to Fuzzy Logic likelihood surface classes ranging from 1 to 4.

Additional to the Fuzzy Logic surface classes we used to assess collision risk, we the planned Tres Vaqueros turbines for collision hazard, using essentially the same rating criteria employed by the Alameda County Scientific Review Committee (SRC) at old-generation turbines.⁵ The only substantial difference in the ratings was that the SRC regarded hazard levels to be greater at turbines adjacent to vacant towers and broken turbines, whereas the planned Tres Vaqueros turbines will not occur next to vacant towers or broken turbines. Contrary to the Fuzzy Logic surface classes, we already have the means to compare fatality rates among SRC ratings, so we used the ratings at old-generation turbines as well as

⁴ Smallwood, K. S. and L. Neher. 2010. Siting Repowered Wind Turbines to Minimize Raptor Collisions at Tres Vaqueros. Report to East Bay Regional Park District, Oakland, California.

⁵ Smallwood, S. 2010. Old-Generation Wind Turbines Rated for Raptor Collision Hazard by Alameda County Scientific Review Committee in 2010, an Update on those Rated in 2007, and an Update on Tier Rankings. http://www.altamontsrc.org/alt_doc/p155_smallwood_src_turbine_ratings_and_status.pdf
Alameda County SRC (Smallwood, K. S., S. Orloff, J. Estep, J. Burger, and J. Yee). February 7, 2008. Guidelines for siting wind turbines recommended for relocation to minimize potential collision-related mortality of four focal raptor species in the Altamont Pass Wind Resource Area. Alameda County SRC document P-70. 21 pp. P70 SRC Hazardous Turbine Relocation Guidelines
Alameda County SRC (Smallwood, K. S., S. Orloff, J. Estep, J. Burger, and J. Yee). December 11, 2007. SRC selection of dangerous wind turbines. Alameda County SRC document P-67. 8 pp. http://www.altamontsrc.org/alt_doc/p67_src_turbine_selection_12_11_07.pdf

our application of the ratings at the Buena Vista Wind Energy project turbines to project fatality rates to ratings of planned new turbines at Tres Vaqueros.

We calculated mean and standard error (SE) fatality rates per group of similarly rated turbines among old-generation and Buena Vista turbines. We grouped Buena Vista turbines into those rated <7 and those rated >7, because the SRC had determined that turbines rated 7-10 warranted management actions, whereas those rated <7 were of lower priority. Furthermore, the Buena Vista fatality rates demonstrated natural breaks at ratings below and above 7. Among the old-generation turbines, we used natural breaks in fatality rates to group turbines into ratings of 7.0 to 8.0 and 8.5 to 10.0. To compare predicted fatality rates of Tres Vaqueros wind turbines, we first calculated means and SE of estimated fatality rates at wind turbines rated for collision hazard by the SRC.

Using the adjusted mean fatality rate, F_p , as a starting point, I solved for X , the adjusted fatality rate of wind turbines rated for hazard levels <7.0 and predicted to occur at a particular MW turbine size:

$$F_p = \frac{(N_1\alpha_1X + N_2\alpha_2X + N_3\alpha_3X)}{\sum N},$$

where N_1 , N_2 , and N_3 were the numbers of turbines composing groups rated by the SRC as <7, 7-8, and 8.5-10 among old-generation turbines or by me as <7 and >7 at Buena Vista (only N_1 and N_2 used in the latter case), and α_1 , α_2 , and α_3 were fatality rate multipliers of the associated turbine hazard rating group relative to the mean fatality rate of turbines rated <7. The multiplier α_1 always equaled 1.0. Algebraically, the equation could be rearranged to solve for X :

$$X = \frac{F_p \sum N}{(N_1\alpha_1 + N_2\alpha_2 + N_3\alpha_3)}.$$

Once X was solved, fatality rates for turbines assigned higher hazard ratings could be arrived at by using the raw differences between mean fatality rates associated with hazard ratings. Fatality rates at turbines with higher hazard ratings were divided by rates at turbines rated <7, so the former was expressed as a multiple of the latter, and this ratio was used as a multiplier against X to adjust predicted fatality rates at planned Tres Vaqueros turbines that I rated 7 or higher. To adjust for SRC-style hazard ratings, I averaged the fatality rate multipliers between old-generation wind turbines and Buena Vista wind turbines at each SRC hazard level ≥ 7 . I averaged the multipliers because those derived from the old-generation turbines were based on large sample sizes of turbines and those derived from Buena Vista were based on the largest turbines yet installed in the APWRA, i.e., the uniquely valuable information of each group prompted me to treat their contributions equally. Furthermore, the Buena Vista turbines occurred across the street from the planned Tres Vaqueros turbines, so were similar in topography and habitat.

To estimate fatality rates that likely were caused by the 330 KW Howden wind turbines during their peak operation, we used methods similar to those reported to East Bay Regional Park District (Smallwood 2010).⁶ Two key differences from the earlier report to East Bay Regional Park District was having another year of fatality monitoring data from the Buena Vista Wind Energy project and using individual wind turbines instead of turbine strings as the sampling unit. Models derived from fatality rates regressed on turbine size throughout the APWRA were used to project likely fatality rates at 330 KW Howden turbines.

⁶ Smallwood, K. S. 2010. Baseline Avian and Bat Fatality Rates at the Tres Vaqueros Wind Project, Contra Costa County, California. Report to the East Bay Regional Park District, Oakland, California.

The predictive models of fatality rates regressed on turbine size were also used to predict fatality rates at the planned 2.3 MW Siemens turbines. We also used the latest adjustment factors to account for scavenger removals of carcasses, searcher detection error, and differences in the maximum fatality search radius around wind turbines. The predicted fatality rates at Tres Vaqueros served as the basis for comparing impacts of individual wind turbines, as described in the preceding equations.

RESULTS

Project-wide Fuzzy Logic surface classes representing collision hazard zones were overlaid with planned wind turbine locations (Figures 1-4). Following discussions between the project applicant, East Bay Regional Park District, and ourselves, all but a few of the planned wind turbine locations overlap with surface classes associated with the two highest collision risk zones for the four target raptor species.

Adjusted fatality rates in the APWRA declined with increasing wind turbine size, represented by inverse power functions (Table 1). The regression slope fit to the golden eagle data was not significant, but the lack of significance did not matter to our purpose, which was simply to fit a line to the data. To this end, the root mean square error (RMSE, or simply SE) was relatively small, so the fit was good. We used the regression models to predict fatality rates that should have occurred at the 0.33 MW Howden turbines while they were fully operational, as well as to the planned 2.3 MW Siemens turbines (see two right-side columns in Table 1). The predicted mean fatality rate of American kestrels was 0 at the planned 2.3 MW turbines, but we decided to use a fatality rate value between 0 and the upper end of the 80% confidence range to be conservative.

Fatality rates of golden eagle and red-tailed hawk increased with increasing SRC hazard rating at old-generation wind turbines (Figure 5, Table 2) and at Buena Vista wind turbines (Table 3). They increased for American kestrel among old-generation turbines, but not among Buena Vista turbines (Tables 2 and 3). They also increased for burrowing owls among the old-generation turbines, but the ratings did not matter at Buena Vista because no burrowing owl fatalities have been detected yet at those turbines.

Using the equations summarized in the Methods section, we estimated annual fatalities at individual 2.3 MW wind turbines, accounting for SRC-style ratings (Table 4). We then summarized the outcome of not installing turbines rated 7 or greater (Table 5). We estimated that based on differences in turbine size alone, fatality rates at Tres Vaqueros would decline 61% for golden eagle, 69% for red-tailed hawk, and 100% for burrowing owl and American kestrel (remember, however, that we decided to assume some American kestrels would be killed). Factoring in SRC-style ratings of turbine hazard, and depending on whether turbines rated >7 are installed, we estimated that the 2.3 MW turbines would reduce annual fatalities 65% to 75% for golden eagle, 72% to 82% for red-tailed hawk, and nearly 100% for American kestrel and burrowing owl (Table 5). Assuming the highly rated turbines would not be installed, we predicted that annual fatalities would be 0-2.8 golden eagles, 0-7 red-tailed hawks, 0-13.8 American kestrels, and 0 burrowing owls (Table 5). We estimated that by not installing the 5 most highly rated turbines, one fewer golden eagles and four fewer red-tailed hawks would be killed by the project each year, or a 28% reduction for golden eagle and a 35% reduction for red-tailed hawk.

DISCUSSION

Our results indicate that the repowered Tres Vaqueros Wind Energy project, using carefully sited 2.3 MW turbines, would cause substantially lower fatality rates than did the project when it was composed of Howden wind turbines. We relied on SRC ratings of wind turbine hazard levels as our assessment tool because we had a basis for doing so; the Fuzzy Logic surface classes have yet to be validated. We are hopeful that the Fuzzy Logic surface classes will perform as well as or better than did the SRC ratings. We suspect that they should because the surface classes were based on very careful analysis of available

bird flight behaviors and burrowing owl burrow locations, whereas the SRC ratings were based on judgment. Nevertheless, our highest SRC ratings corresponded well with the highest Fuzzy Logic surface classes, indicating that the five turbines rated >7 warrant not being installed if equal or better siting choices are available.

We arbitrarily increased the predicted American kestrel fatality rates to a value >0, even though the turbine size regression predicted that 0 kestrels would be killed by the 2.3 MW turbines. We did this because the regression also projected the 1 MW Buena Vista turbines to kill 0 American kestrels, yet the Buena Vista project did kill some kestrels. The value we chose to use at Tres Vaqueros was nearly half the fatality rate estimated at Buena Vista, and halfway between 0 and the upper end of the confidence range resulting from the regression between fatality rates and turbine size. We feel comfortable with our predicted American kestrel fatality rate, but of course we hope that the regression model prediction proves to be accurate.

Table 1. Fatality rates regressed on rated capacity (MW) of turbine models, relying on 2008-2010 data from Buena Vista Wind Energy project and 2006 and 2007 bird years for the rest of the wind turbines in the APWRA. The models were inverse power functions with the value 1 added to the dependent variable for American kestrel, burrowing owl, and golden eagle, but not for red-tailed hawk. Fatality rates at 0.25 MW turbines were excluded due to small sample size.

Species	r ²	SE	P-value	a	b	Predicted fatality rate per turbine size	
						0.33 MW	2.30 MW
American kestrel	0.38	0.27	<0.10	1.0542	-0.1923	0.3047	0.0000
Golden eagle	0.12	0.17	>0.10	1.0979	-0.0581	0.1709	0.0460
Red-tailed hawk	0.69	0.59	<0.01	0.2506	-0.7960	0.6057	0.1291
Burrowing owl	0.51	0.57	<0.05	1.2923	-0.5236	1.3092	0.0000

Table 2. Differences in fatality rates at the APWRA-wide old-generation wind turbines during bird years 2006-2007 between wind turbines rated low, moderate, and high for collision hazard, based on the rating approach used by the Alameda County Scientific Review Committee.

Species	Deaths/MW/yr at wind turbines with SRC ratings of <7.0 (n = 2,258)		Deaths/MW/yr at wind turbines with SRC ratings of 7.0-8.0 (n = 1,115)		Deaths/MW/yr at wind turbines with SRC ratings of 8.5-10.0 (n = 306)		Deaths/MW/yr at turbines with higher ratings as multiple of those with ratings <7.0	
	Mean	SE	Mean	SE	Mean	SE	7.0-8.0	8.5-10.0
	American kestrel	1.128	0.223	1.728	0.402	1.644	0.389	1.53
Golden eagle	0.129	0.047	0.457	0.108	0.781	0.146	3.54	6.05
Red-tailed hawk	0.749	0.115	2.875	0.340	3.828	0.375	3.84	5.11
Burrowing owl	2.187	0.352	3.681	0.578	4.533	0.783	1.68	2.07

Table 3. Differences in fatality rates at the Buena Vista Wind Energy project between wind turbines rated low and high for collision hazard, based on the rating approach used by the Alameda County Scientific Review Committee at old-generation wind turbines.

Species	Deaths/MW/yr at wind turbines with SRC-style ratings of <7 (n = 24)		Deaths/MW/yr at wind turbines with SRC-style ratings of 7.5-9.5 (n = 14)		Deaths/MW/yr at turbines with high ratings as multiple of those with low ratings
	Mean	SE	Mean	SE	
American kestrel	0.179	0.099	0.145	0.145	0.81
Golden eagle	0.067	0.047	0.166	0.089	2.48
Red-tailed hawk	0.152	0.062	0.435	0.189	2.86
Burrowing owl	0.000	0.000	0.000	0.000	0.00

Table 4. Proposed wind turbines at the Tres Vaqueros project site, SRC-style ratings applied to them, and predicted fatality rates. Adjustments for SRC-style hazard ratings were averaged between mean fatality rates at old-generation wind turbines and at Buena Vista wind turbines.

Turbine	SRC-style rating	Predicted, adjusted fatality rates, deaths/MW/Yr, accounting for turbine size and SRC-style hazard ratings			
		American kestrel	Golden eagle	Red-tailed hawk	Burrowing owl
B1	<7	0.3159	0.0578	0.1513	0.0000
B2	<7	0.3159	0.0578	0.1513	0.0000
B3	<7	0.3159	0.0578	0.1513	0.0000
B4	<7	0.3159	0.0578	0.1513	0.0000
B6	<7	0.3159	0.0578	0.1513	0.0000
A1	<7	0.3159	0.0578	0.1513	0.0000
A2	<7	0.3159	0.0578	0.1513	0.0000
A3	<7	0.3159	0.0578	0.1513	0.0000
D2	<7	0.3159	0.0578	0.1513	0.0000
D3	<7	0.3159	0.0578	0.1513	0.0000
E1	<7	0.3159	0.0578	0.1513	0.0000
E4	<7	0.3159	0.0578	0.1513	0.0000
E3	<7	0.3159	0.0578	0.1513	0.0000
E2	<7	0.3159	0.0578	0.1513	0.0000
B5	<7	0.3159	0.0578	0.1513	0.0000
Alt 7A	<7	0.3159	0.0578	0.1513	0.0000
Alt 9	<7	0.3159	0.0578	0.1513	0.0000
Alt 10	<7	0.3159	0.0578	0.1513	0.0000
Alt 11	<7	0.3159	0.0578	0.1513	0.0000
C1	<7	0.3159	0.0578	0.1513	0.0000
C3	<7	0.3159	0.0578	0.1513	0.0000
C4	<7	0.3159	0.0578	0.1513	0.0000
C5	<7	0.3159	0.0578	0.1513	0.0000
C2	7	0.3541	0.1684	0.4951	0.0000
D1	7.5	0.3541	0.1684	0.4951	0.0000
D5	7.5	0.3541	0.1684	0.4951	0.0000
A4	9	0.3445	0.2278	0.6398	0.0000
D4	9.5	0.3445	0.2278	0.6398	0.0000

Table 5. Predicted annual fatalities at Tres Vaqueros Wind Energy Project before and after repowering, where predictions were based first on APWRA-wide fatality rates regressed on turbine size (MW) and projected to the turbine sizes of the Howden and Siemens turbines pre- and post-repowering, and second on mean differences in fatality rates among SRC hazard rating values applied to old-generation turbines throughout the APWRA and to Buena Vista turbines.

Species	Annual fatalities				Reduction of mean (%)				
	Estimated in 28.47 MW Howden project before repowering		Predicted in 41.4 MW Siemens project after repowering		Based only on turbine size	Factoring in SRC- style ratings of planned turbine sites		Estimated range of annual fatalities after repowering	
	Mean	Range	Mean	Range		With all rated ≥ 7.0	Without rated ≥ 7.0	With all rated ≥ 7.0	Without rated ≥ 7.0
Golden eagle	4.9	0-11.1	1.9	0-10.9	61	65	75	0-3.9	0-2.8
Red-tailed hawk	17.2	0-38.7	5.3	0-36.7	69	72	82	0-10.8	0-7.0
American kestrel	8.7	0-18.6	0.0	0-14.3	100	100	100	0-13	0-13.8
Burrowing owl	37.3	16.5-58.1	0.0	0-30.3	100	100	100	0	0

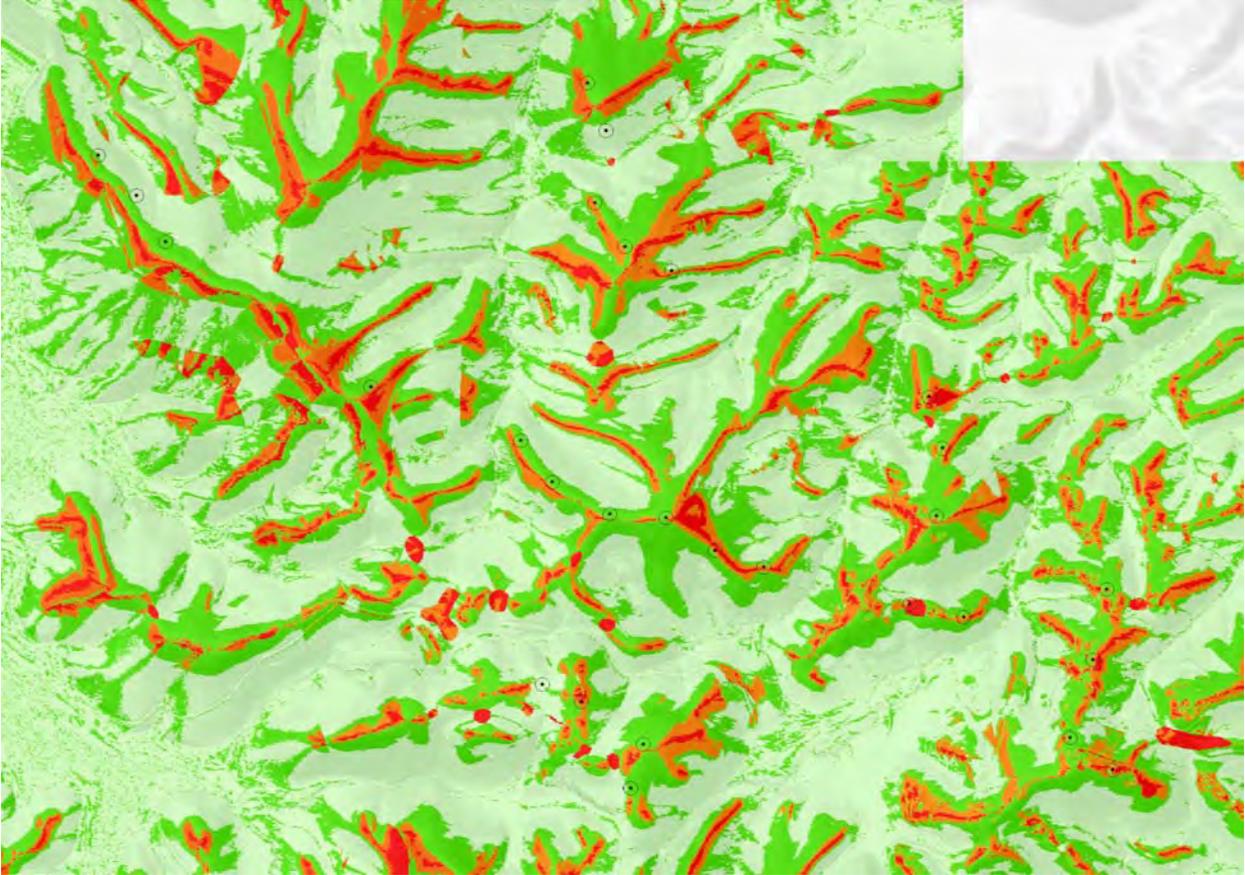


Figure 1. Golden eagle collision hazard map, based on Fuzzy Logic likelihood surface classes developed from observation data that were collected on Vasco Caves Regional Preserve. Red corresponds with the highest likelihood of occurrence, orange corresponds with the second highest likelihood, dark green corresponds with the third highest likelihood, and light green corresponds with the least likelihood. Proposed wind turbine sites are depicted by center-dotted black circles.

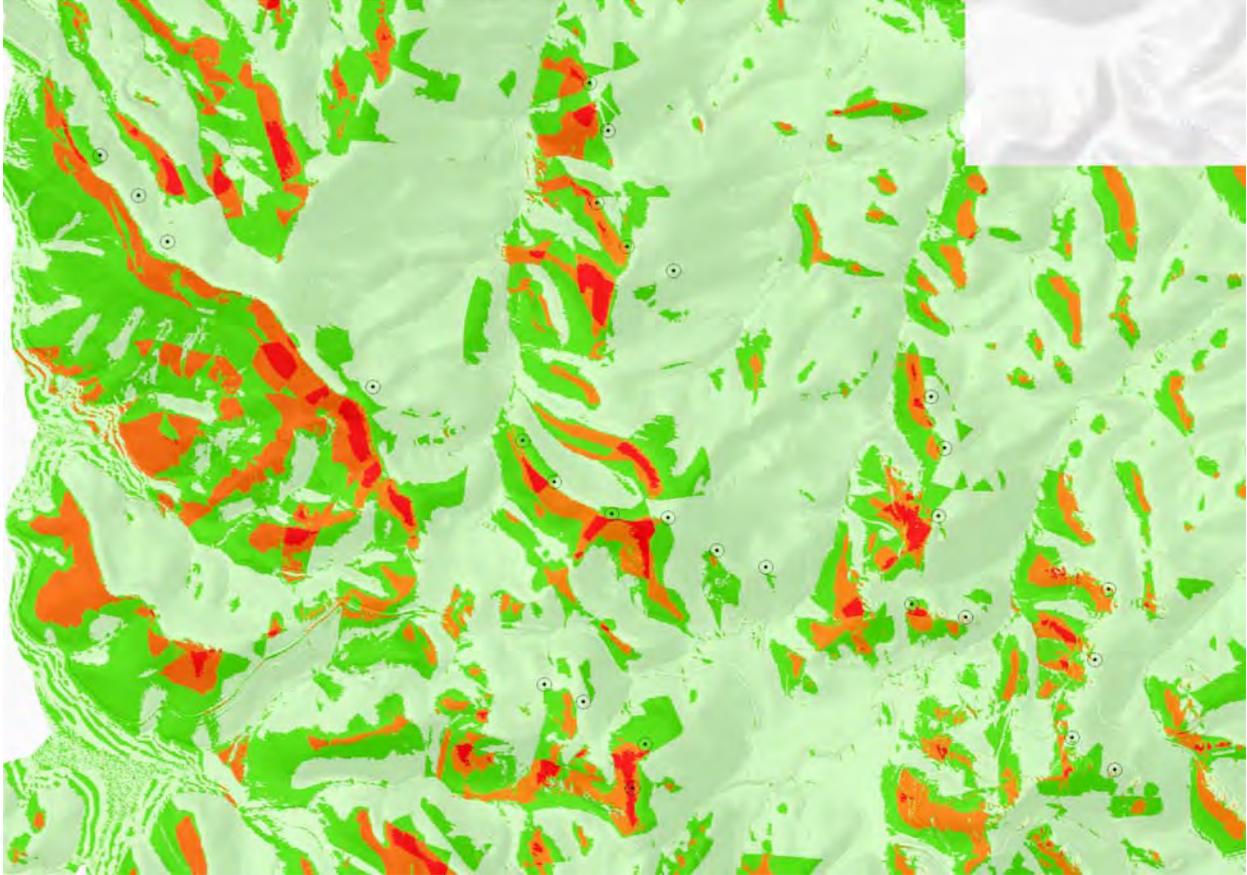


Figure 2. Red-tailed hawk collision hazard map, based on Fuzzy Logic likelihood surface classes developed from observation data that were collected on Vasco Caves Regional Preserve. Red corresponds with the highest likelihood of occurrence, orange corresponds with the second highest likelihood, dark green corresponds with the third highest likelihood, and light green corresponds with the least likelihood. Proposed wind turbine sites are depicted by center-dotted black circles.

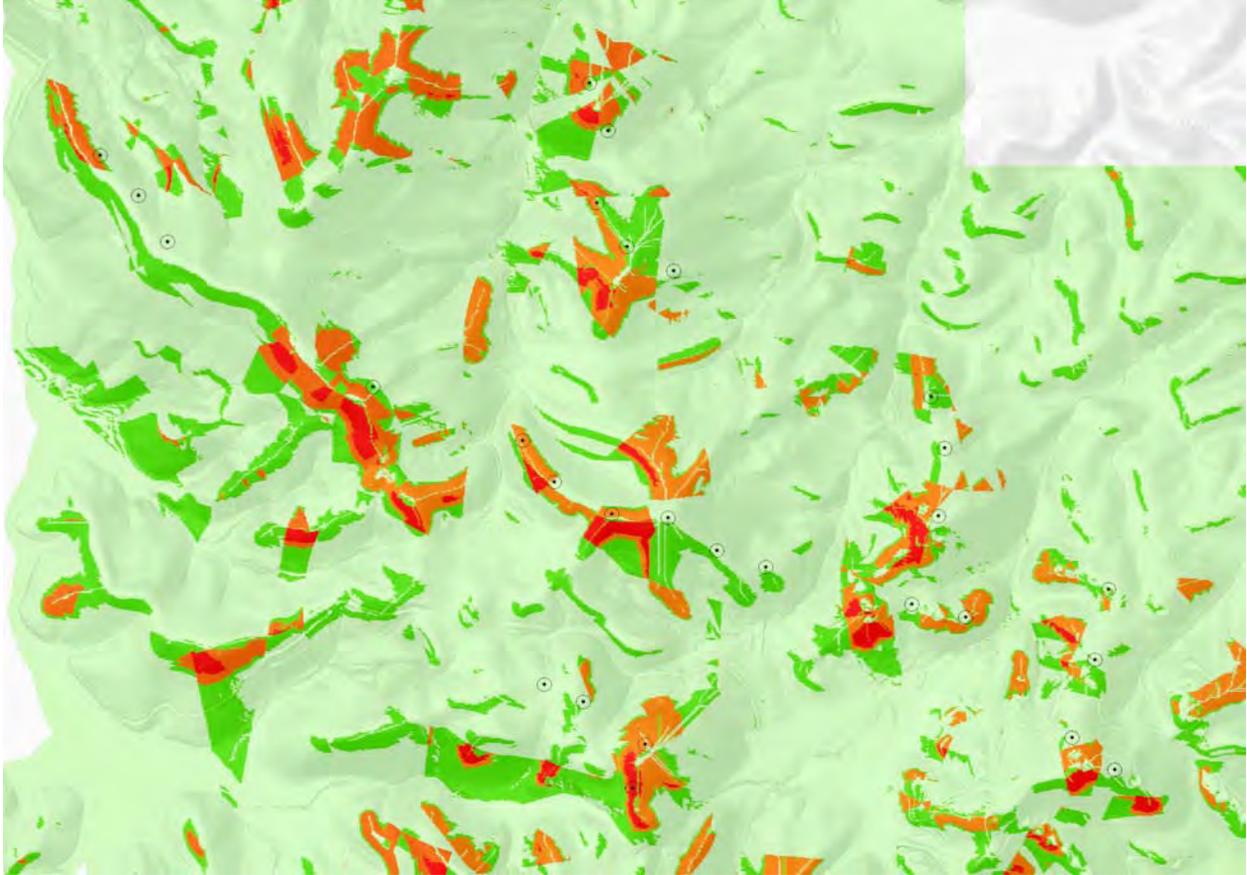


Figure 3. American kestrel collision hazard map, based on Fuzzy Logic likelihood surface classes developed from observation data that were collected on Vasco Caves Regional Preserve. Red corresponds with the highest likelihood of occurrence, orange corresponds with the second highest likelihood, dark green corresponds with the third highest likelihood, and light green corresponds with the least likelihood. Proposed wind turbine sites are depicted by center-dotted black circles.

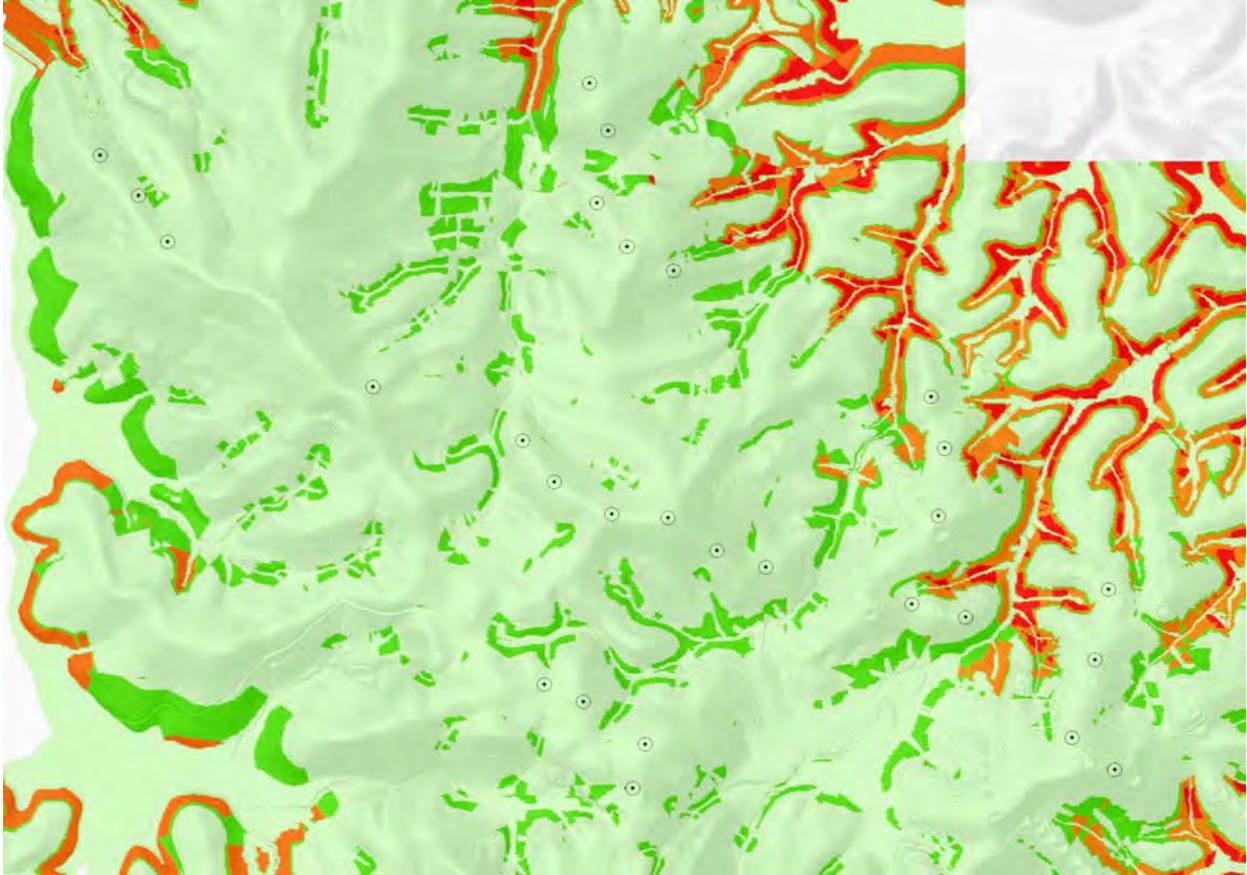


Figure 4. Burrowing owl collision hazard map, based on Fuzzy Logic likelihood surface classes developed from observation data that were collected on Vasco Caves Regional Preserve. Red corresponds with the highest likelihood of occurrence, orange corresponds with the second highest likelihood, dark green corresponds with the third highest likelihood, and light green corresponds with the least likelihood. Proposed wind turbine sites are depicted by center-dotted black circles.

Deaths/MW/Yr during bird years 2006-2007

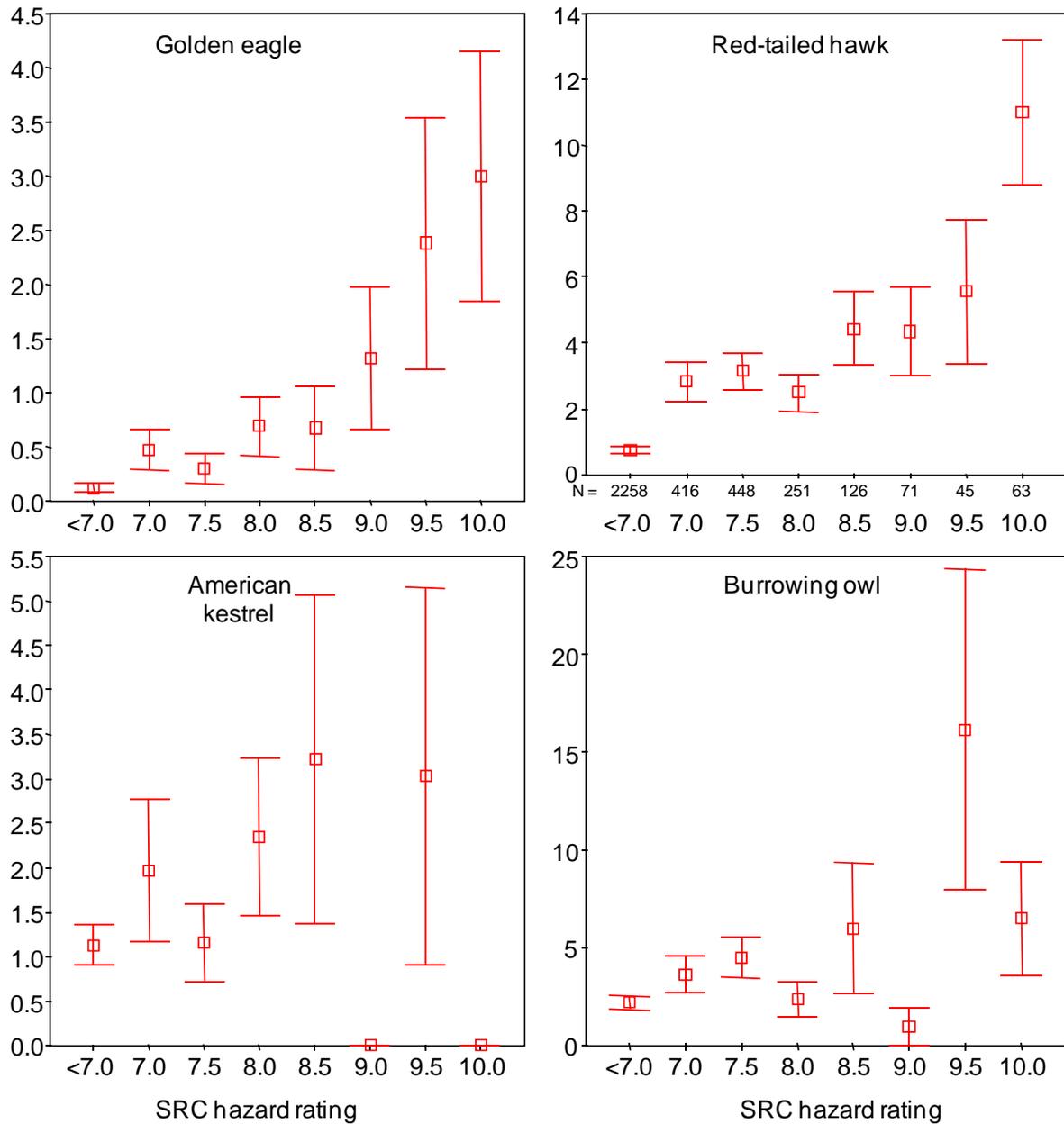


Figure 5. Mean and SE fatality rates (deaths/MW/year) of golden eagle, red-tailed hawk, American kestrel, and burrowing owl with increasing SRC collision hazard ratings among old-generation wind turbines.

APPENDIX A

Tres Vaqueros Conservation Easement Deed

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**RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:**

Shawn J. Zovod, Esq.
Ebbin Moser + Skaggs, LLP
550 Montgomery Street, Suite 900
San Francisco, CA 94111

With copy to:

Joe Ciolek
Agricultural-Natural Resources Trust of Contra Costa
965 Camino Verde Circle
Walnut Creek, CA 94597

CONSERVATION EASEMENT DEED

THIS CONSERVATION EASEMENT DEED is made by Vaquero Farms Conservation, LLC ("Grantor"), in favor of the Agricultural-Natural Resources Trust of Contra Costa County, a nonprofit public benefit corporation satisfying requirements of § 815 of the California Civil Code ("Grantee").

RECITALS:

A. Grantor is the owner in fee simple of certain real property in the County of Contra Costa, State of California, more particularly described in Exhibits A and B attached hereto and incorporated herein (the "Property").

B. The Property possesses wildlife and habitat values of great importance to Grantor, Grantee, and the people of the State of California and the United States.

C. The Property provides or is capable of providing significant ecological and habitat values that benefit endangered, threatened, and other species (collectively, "conservation values"), as set forth in the Conservation Instrument, including the: California tiger salamander, California red-legged frog, San Joaquin kit fox, western burrowing owl and vernal pool fairy shrimp.

D. This Conservation Easement Deed is being executed and delivered pursuant to the Biological Opinion for the Vineyards at Marsh Creek Project (1-1-04-F-0063) dated as of October 29, 2004 and prepared by the United States Fish and Wildlife Service pursuant to Section 7 of the Federal Endangered Species Act, and as authorized in a permit issued in connection with the development of The Vineyards at Marsh Creek project (the "Project") pursuant to Section 404 of the Clean Water Act (U.S. Army Corps of Engineers File No. 200300007), water quality certification issued by the California Regional Water Quality Control Board Central Valley Region ("RWQCB"), Lake or Streambed Alteration Agreement

(Notification No. 1600-2004-0177-3) issued by the California Department of Fish and Game pursuant to Section 1602 of the California Fish and Game Code (collectively, the "Conservation Instrument"), whereby conservation requirements may be satisfied through establishment of a conservation easement on the Property, including all attachments, amendments, and the Management Plan which is incorporated herein by reference. Any and all reference herein to the Conservation Instrument shall be construed to include reference to any incorporated Management Plan, which shall provide conservation requirements for this Conservation Easement should the Conservation Instrument terminate for any reason, and which is attached hereto at **Exhibit C** in its entirety.

E. The California Department of Fish and Game ("CDFG"), a division of the State of California, has jurisdiction over the conservation, protection, restoration, and management of fish, wildlife, native plants and the habitat necessary for biologically sustainable populations of these species within the State of California pursuant to Fish and Game Code §1802; the CDFG is also authorized to hold easements for these purposes pursuant to California Civil Code §815.3, Fish and Game Code §1348, and other provisions of California law.

F. The United States Fish and Wildlife Service ("USFWS"), an agency within the United States Department of the Interior, has jurisdiction over the conservation, protection, restoration, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of these species within the United States pursuant to the Endangered Species Act, 16 U.S.C. §§1531, *et seq.* ("ESA"), the Fish and Wildlife Coordination Act, 16 U.S.C. §§661-666c, the Fish and Wildlife Act of 1956, 16 U.S.C. §§742(f), *et seq.*, and other provisions of Federal law.

G. Grantor intends to convey to Grantee the right to preserve, protect, sustain, and enhance and/or restore the conservation values of the Property in perpetuity.

H. Grantee is authorized to hold conservation easements pursuant to California Civil Code §815 and as relevant to tax-exempt non-profit organizations, §501(c)(3) of the Internal Revenue Code.

I. The Property is currently improved with multiple Wind Turbine Generators ("wind turbines") and related improvements and is subject to certain leases that grant multiple lessees the right to access and use the Property in accordance with the wind turbine leases that are attached as **Exhibit D**.

COVENANTS, TERMS, CONDITIONS AND RESTRICTIONS

NOW, THEREFORE, in consideration of the above recitals and the mutual covenants, terms, conditions, and restrictions contained herein, and pursuant to the laws of the United States and the State of California including California Civil Code §815 *et seq.*, Grantor hereby voluntarily grants and conveys to Grantee a conservation easement in perpetuity over the Property of the nature and character consistent with the Conservation Instrument to the extent hereinafter set forth (the "Conservation Easement").

1. Purpose. The purpose of this Conservation Easement is to ensure that the Property will be managed in perpetuity subject to the terms of this Conservation Easement and the Management Plan attached as Exhibit C as aquatic and associated upland and dispersal habitat for the federally-listed Threatened California red-legged frog and federally-listed Threatened California tiger salamander, and as foraging and denning habitat for the federally-listed Endangered San Joaquin kit fox and state Species of Concern western burrowing owl. It will also be managed as potential habitat for the federally-listed Threatened vernal pool fairy shrimp. As such, this Conservation Easement will ensure that the Property will be retained in a condition contemplated by the Conservation Instrument and will prevent any use of the Property that will significantly impair or interfere with the conservation values of the Property. Grantor intends that this Conservation Easement will confine the use of the Property to such activities including, without limitation, as the activities permitted by the Reserved Rights (Section 5.1) and those activities involving the preservation of grasslands and aquatic habitats and enhancement of native species and their habitats through a grazing regime and noxious weed and predator control, and in a manner consistent with the current and future contemplated uses of the Property and the purposes set forth in this Conservation Easement and the Conservation Instrument.

2. Rights of Grantee. To accomplish the purposes of this Conservation Easement, Grantor hereby grants and conveys the following rights to Grantee, along with the right of enforcement to the CDFG and the USFWS or their designee as third party beneficiaries hereof, consistent with the Conservation Instrument:

A. To preserve, protect, sustain, and enhance and/or restore the conservation values of the Property.

B. To enter upon the Property at reasonable times to monitor Grantor's compliance with and to otherwise enforce the terms of this Conservation Easement; provided that Grantee shall not unreasonably interfere with Grantor's authorized use and quiet enjoyment of the Property.

C. To prevent any activity on or use of the Property that is inconsistent with the habitat conservation purposes and terms of this Conservation Easement and to require the restoration of such areas or features of the Property that may be damaged by any act, failure to act, or any use or activity that is inconsistent with the purposes and terms of this Conservation Easement. Grantee may compel Grantor to restore any areas or features damaged as a result of Grantor's failure to act, or use or activity that is inconsistent with the purposes of this Conservation Easement. Grantee may also compel any person or entity (collectively "damaging party") to restore any areas or features damaged as a result of the damaging party's failure to act, or use or activity that is inconsistent with the purposes of this Conservation Easement.

D. All mineral, air and water rights held by Grantor necessary to preserve, protect and sustain the biological resources and conservation values of the Property. This grant of rights specifically excludes any and all air or water rights held by a third party, including but not limited to the air rights retained by Vaquero Farms, Inc. described in

Exhibit B and by lessees described in Paragraph 5 of this Conservation Easement (5 Grantor's Reserved Rights) and excludes Grantor's right, title and interest in and to any waters consisting of: (a) any riparian water rights appurtenant to the Property; (b) any appropriative water rights held by Grantor to the extent those rights are appurtenant to the Property; (c) any waters, the rights to which are secured under contract between the Grantor and any irrigation or water district, to the extent such waters are customarily applied to the Property; (d) any water from wells that are in existence or may be constructed in the future on the Property or on those lands described as excepted from the Property in the legal description and that were historically used by the Grantor to maintain the Property in a flooded condition; and (e) any right of a lessee to appropriate water (collectively, "Easement Waters").

E. All present and future development rights.

3. Prohibited Uses. Any activity on or use of the Property inconsistent with the conservation purposes of this Conservation Easement and the Conservation Instrument is prohibited. Without limiting the generality of the foregoing, Grantor, its personal representatives, heirs, successors, assigns, employees, agents, lessees, licensees and invitees are expressly prohibited from doing or permitting any of the following on the Property unless authorized by the Conservation Instrument, Conservation Easement, or any related Management Plan:

A. Construction, reconstruction or placement of any building, billboard, sign, structure, or other improvement, except as may be currently existing on the Property and except as permitted by Section 5 Grantor's Reserved Rights.

B. Unseasonable watering; use of fertilizers, herbicides, pesticides, biocides, or other agricultural chemicals except as necessary to implement the Management Plan; mosquito abatement activities except as necessary to implement the Management Plan; weed abatement activities except as necessary to implement the Management Plan; incompatible fire protection activities; and any and all other uses which may adversely affect the conservation purposes of this Conservation Easement.

C. Grazing or agricultural activity in a manner that is inconsistent with the Management Plan.

D. Commercial or industrial uses.

E. Depositing or accumulating soil, trash, ashes, refuse, waste, bio-solids or any other material.

F. Filling, dumping, excavating, draining, dredging, mining, drilling, removing, exploring for or extracting minerals, loam, gravel, soil, rock, sand or other material on or below the surface of the Property, or granting or authorizing surface entry for any of these purposes.

G. Altering the surface or general topography of the Property, including building roads, paving or otherwise covering the Property with concrete, asphalt, or any other impervious material, but except as permitted by Section 5 Grantor's Reserved Rights.

H. Removing, destroying, or cutting trees, shrubs or other vegetation, except as required for: (i) fire breaks; (ii) maintenance of existing foot trails or roads; (iii) prevention or treatment of disease; (iv) utility line clearance; (v) exercising Grantor's Reserved Rights.

I. Use of motorized vehicles, including off-road vehicles, except on existing or permitted roadways.

J. Transferring any water right necessary to maintain or restore the biological resources of the Property.

K. Planting, introduction or dispersal of non-native or exotic plant or animal species.

L. Manipulating, impounding or altering any natural watercourse, body of water or water circulation on the Property and any activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or sub-surface waters.

M. Recreational activities including, but not limited to, horseback riding, biking, hunting or fishing.

N. Permitting a general right of access to the property.

4. Grantor's Duties. Grantor shall undertake all reasonable actions to prevent the unlawful entry and trespass by persons whose activities may degrade or harm the conservation values of the Property and are inconsistent with the Conservation Instrument. In addition, Grantor shall undertake all necessary actions to perfect Grantee's rights under this Conservation Easement, including, but not limited to, Grantee's water rights.

5. Grantor's Reserved Rights. All rights accruing from Grantor's ownership of the Property, including the right to engage in or permit or invite others to engage in all uses of the Property that are not prohibited herein and are not inconsistent with the purposes of this Conservation Easement, are reserved to Grantor and Grantor's personal representatives, heirs, successors, and assigns. These rights include, but are not limited to the right to operate or allow others to operate wind turbine generators and associated improvements on the Property in accordance with Paragraph 5.1 and the wind turbine generator leases attached as **Exhibit D**. Associated improvements include, but are not limited to, utility poles and lines, storage areas and facilities, administrative facilities and other improvements described in the wind turbine generator leases.

5.1. Wind Turbine Generator Reserved Rights. Grantor reserves to itself, personal representatives, heirs, successors, grantees, assigns and lessees, the right to (i) operate wind turbine generators and associated improvements currently existing on

the Property in accordance with the leases attached as **Exhibit D**; (ii) repair, maintain, remove and/or replace existing wind turbine generators and related improvements; (iii) exercise all rights permitted by the leases attached as **Exhibit D**, except as specifically restricted by Paragraph 3.F. of this Easement; (iv) renew and/or extend existing leases or enter into new leases related to the operation of wind turbine generators and related improvements, provided such renewals, extensions, or new leases are on the same or substantially the same terms as the current leases, and provided that Grantor shall use its best efforts to preclude any future lessees from engaging in any landscaping or land contouring activities, improving any springs, or constructing dams, drainage facilities, or storage tanks; (v) construct new wind turbine generators and related improvements provided that the overall square footage of land occupied by the wind turbine generators, whether operational or not, and related improvements is not increased above the square footage permitted by the existing leases; (vi) all air and/or wind necessary or useful to operate or maintain current and future wind turbine generators; (vii) engage in all activities described in existing leases or that may be necessary to enjoy the benefits of any existing lease, which leases are shown on **Exhibit D**, or future leases entered into in accordance with this Paragraph 5.1 and subject to the restrictions set forth in Paragraph 3.F.; (viii) engage in all activities described in existing easements or that may be necessary to enjoy the benefits of any existing easements, which easements are shown on **Exhibit D**; (ix) grant new easements or rights of way that provide access to adjacent lands for conservation purposes; (x) transfer fee title to the Property, subject to the provisions set forth in Section 10 Subsequent Property Transfer.

6. Remedies for Violation and Corrective Action. If Grantee, Grantor, or a third party beneficiary determines there is a violation of the terms of this Conservation Easement or that a violation is threatened, written notice of such violation and a demand for corrective action sufficient to cure the violation shall be given to Grantor or Grantee. In any instance, measures to cure the violation shall be reviewed and approved by third party beneficiaries CDFG and USFWS. If a violation is not cured within 30 days after receipt of written notice and demand, or if the cure reasonably requires more than 30 days to complete and there is failure to begin the cure within the 30-day period or failure to continue diligently to complete the cure, Grantee, Grantor, or third party beneficiary may bring an action at law or in equity in a court of competent jurisdiction to enforce compliance with the terms of this Conservation Easement, to recover any damages to which Grantee, Grantor, or third party beneficiary may be entitled for violation of the terms of this Conservation Easement or for any injury to the conservation values of the Property, or for other equitable relief, including, but not limited to, the restoration of the Property to the condition in which it existed prior to any violation or injury. Without limiting violator's liability therefore, any damages recovered may be applied to the cost of undertaking any corrective action on the Property.

6.1 Injunctive Relief. If Grantee, Grantor, or third party beneficiary, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate significant damage to the conservation values of the Property, Grantee, Grantor, or third party beneficiary may pursue its remedies under this Section without prior notice or

without waiting for the period provided for cure to expire to enjoin the violation, *ex parte* as necessary, by temporary or permanent injunction without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies, and to require the restoration of the Property to the condition that existed prior to any such injury. The remedies described in this Section shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity, including but not limited to, the remedies set forth in Civil Code §815 *et seq.*; inclusive. The failure of Grantee, Grantor, or third party beneficiary to discover a violation or to take immediate legal action shall not bar taking such action at a later time.

6.2 Standing. If at any time Grantee, Grantor, or any successor in interest or subsequent transferee uses or threatens to use the Property for purposes not in conformance with the stated conservation purposes contained herein, or releases or threatens to abandon this Conservation Easement in whole or in part, then, notwithstanding California Civil Code §815 *et seq.*, the California Attorney General, the USFWS and other third-party entities eligible to hold conservation easements for conservation purposes under State and Federal law, or any entity or individual with a justiciable interest in the preservation of this Conservation Easement has standing as an interested party in any proceeding affecting this Conservation Easement.

6.3 Costs of Enforcement. All reasonable costs incurred in enforcing the terms of this Conservation Easement including, but not limited to, costs of suit and attorneys' fees, and any costs of restoration necessitated by violation or negligence under the terms of this Conservation Easement shall be borne by the violator.

6.4 Enforcement Discretion. Enforcement of the terms of this Conservation Easement shall be at the discretion of Grantee, Grantor, or third party beneficiaries, and any forbearance to exercise rights of enforcement under this Conservation Easement in the event of any breach of any term of this Conservation Easement shall not be deemed or construed to be a waiver of such term or of any subsequent breach of the same or any other term of this Conservation Easement or of any rights under this Conservation Easement. No delay or omission in the exercise of any right or remedy upon any breach shall impair such right or remedy or be construed as a waiver.

6.5 Acts Beyond Grantee's or Grantor's Control. Nothing contained in this Conservation Easement shall be construed to entitle Grantee, Grantor, or any third party beneficiary to bring any action for any injury to or change in the Property resulting from causes beyond Grantee or Grantor's control, including, without limitation, fire not caused by Grantee or Grantor, flood, storm, and earth movement, or from any prudent action taken by Grantee or Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes.

6.6 Third Party Beneficiary Right of Enforcement. All rights and remedies conveyed under this Conservation Easement shall extend to and are enforceable by third party beneficiaries CDFG (where CDFG is not Grantee) and USFWS. These rights of

enforcement are in addition to, and do not limit, the rights of enforcement under the Conservation Instrument.

7. Costs and Liabilities. Grantor retains all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Property, including road maintenance and/or other responsibilities identified in the Management Plan, transfer costs, costs of title and documentation review, and maintenance of adequate liability insurance coverage. Grantor remains solely responsible for obtaining any applicable permits and approvals required for any activity or use permitted on the Property by this Conservation Easement, and any such activity or use shall be undertaken in accordance with all applicable federal, state, local and administrative agency laws, statutes, ordinances, rules, regulations, orders and requirements.

7.1 Taxes: No Liens. Grantor shall pay before delinquency all taxes, assessments, fees, and charges of whatever description levied on or assessed against the Property by competent authority (collectively, "taxes"), including any taxes imposed upon, or incurred as a result of, this Conservation Easement, and shall furnish Grantee with satisfactory evidence of payment upon request. Grantor shall keep Grantee's interest in the Property free from any liens, including those arising out of any obligations incurred by Grantor for any labor or materials furnished or alleged to have been furnished at or for use on the Property.

7.2 Hold Harmless. Grantor shall hold harmless, indemnify, and defend Grantee and its members, directors, officers, employees, agents, and contractors and the heirs, personal representatives, successors, and assigns of each of them (collectively, "Indemnified Parties"), from and against all liabilities, penalties, costs, losses, damages, expenses, causes of action, claims, demands, orders, liens, or judgments, including, without limitation, reasonable attorneys' fees, arising from or in any way connected with: (a) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Property, regardless of cause, unless due to the negligence of any of the Indemnified Parties; (b) Grantor's obligations specified in this Conservation Easement; and (c) the obligations, covenants, representations, and warranties of this Conservation Easement relating to Costs and Liabilities of this Section 7.

7.3 No Hazardous Materials Liability. Grantor represents and warrants that it has no knowledge of any release or threatened release of hazardous materials in, on, under, about, or affecting the Property. Without limiting the obligations of Grantor as otherwise provided in this instrument, Grantor agrees to indemnify, protect, and hold harmless the Indemnified Parties against any and all Claims arising from or connected with any hazardous materials present, released in, on, from, or about the Property, at any time, of any substance now or hereafter defined, listed, or otherwise classified pursuant to any federal state, or local law, regulation, or requirement as hazardous, toxic, polluting, or otherwise contaminating to the air, water, or soil, or in any way harmful or threatening to human health or the environment, unless caused solely by any of the Indemnified Parties.

8. Best and Most Necessary Use. The habitat conservation purposes of the Conservation Easement are presumed to be the best and most necessary public use as defined in equity and pursuant to California Code of Civil Procedure §1240.680 notwithstanding Code of Civil Procedure §§1240.690 and 1240.700.

9. Conservation Easement Assignment or Transfer. This Conservation Easement may be assigned or transferred by Grantee or any successor in interest upon written approval of third party beneficiaries CDFG (where CDFG is not Grantee) and USFWS, which approval shall not be unreasonably withheld, but Grantee shall give Grantor, CDFG, and USFWS at least thirty (30) days prior written notice of the transfer. Approval of any assignment or transfer may be withheld whenever it will result in a merger of the Conservation Easement and the Property in a single Property owner (thereby extinguishing the Conservation Easement) if no method or mechanism deemed adequate to preserve, protect, and sustain the Property in perpetuity has been established. Grantee or any successor in interest may assign or transfer its rights and obligations under this Conservation Easement only to an entity or organization authorized to acquire and hold conservation easements pursuant to California Civil Code §815.3 and as approved by the CDFG and the USFWS. As a condition of such assignment or transfer, Grantee shall require that the conservation purposes of this Conservation Easement and the Conservation Instrument are carried out and notice of such restrictions, including the Conservation Instrument, shall be recorded in the County where the Property is located. The failure of Grantee to perform any act required by this paragraph shall not impair the validity of this Conservation Easement or its enforcement in any way.

10. Subsequent Property Transfer. Grantor's interest to all or a portion of the Property may be assigned or transferred by Grantor. Grantor agrees to incorporate the terms of this Conservation Easement in any deed or other legal instrument by which Grantor divests itself of any interest in all or a portion of the Property, including, without limitation, a leasehold interest. Grantor further agrees to give Grantee and third party beneficiaries CDFG (where CDFG is not Grantee) and USFWS written notice of the intent to transfer any interest at least 30 days prior to the date of such transfer. Grantee or any third party beneficiary shall have the right to prevent subsequent transfers in which prospective subsequent claimants or transferees are not given notice of the terms, covenants, conditions and restrictions of this Conservation Easement or whenever a subsequent Property transfer will result in a merger of the Conservation Easement and the Property in a single Property owner (thereby extinguishing the Conservation Easement) if no method or mechanism deemed adequate to preserve, protect, and sustain the Property in perpetuity has been established. The failure of Grantor to perform any act required by this section shall not impair the validity of this Conservation Easement or limit its enforcement in any way.

11. Estoppel Certificates. Grantee shall, within 30 business days after receiving Grantor's request therefore, execute and deliver to Grantor a document certifying, to the best knowledge of the person executing the document, that Grantor is in compliance with any obligation of Grantor contained in this Conservation Easement, or otherwise evidencing the

status of such obligation to the extent of Grantee's knowledge thereof, as may be reasonably requested by Grantor.

12. Notices. Any notice, demand, request, consent, approval, or other communication that Grantor, Grantee, or third party beneficiaries CDFG and USFWS desires or is required to give to the others shall be in writing and either served personally or sent by first-class mail, postage prepaid or by recognized overnight courier that guarantees next-day delivery addressed as follows:

To Grantor: Vaquero Farms Conservation, LLC
3820 Blackhawk Road
Danville, CA 94506
Attn: Steve Beinke

To Grantee: To Grantee and Third Party Beneficiaries:
Agricultural-Natural Resources Trust of Contra Costa
County
c/o Contra Costa County Agricultural Commissioner
2366-A Stanwell Circle
Concord, CA 94520
Attn: Ed Meyer

To CDFG: Office of the General Counsel
California Department of Fish and Game
1416 9th Street, 12th Floor
Sacramento, California 95814
Attn: General Counsel

and to: California Department of Fish and Game
Central Coast Region
PO Box 47
Attn: Regional Manager

To USFWS: U.S. Fish and Wildlife Service
Field Office
2800 Cottage Way
Sacramento, CA 95825
Attn: Field Supervisor

or to such other address as a party shall designate by written notice to the others.

Notice shall be deemed effective upon delivery in the case of personal delivery or delivery by overnight courier or, in the case of delivery by first class mail, five (5) days after deposit into the United States mail.

13. Recordation. Grantor shall submit an original, signed and notarized Conservation Easement Deed to Grantee and Grantee shall promptly record this instrument in the official records of the County in which the Property is located, and shall thereafter promptly provide a conformed copy of the recorded Conservation Easement to the Grantor and to USFWS. Grantee may re-record at any time as may be required to preserve its rights in this Conservation Easement.

14. Amendment. This Conservation Easement may be amended by Grantor and Grantee only by mutual written agreement and written approval of third party beneficiaries CDFG (where CDFG is not Grantee) and USFWS. Any such amendment shall be consistent with the purposes of this Conservation Easement and shall not affect its perpetual duration, and Grantee shall promptly record this amended instrument in the official records of the County in which the Property is located, and shall thereafter promptly provide a conformed copy of the recorded amended Conservation Easement to the Grantor and to USFWS and CDFG (where CDFG is not Grantee).

15. Funding. Funding shall be held in trust or by other means specified in the Conservation Instrument for the perpetual management, maintenance, and monitoring of this Conservation Easement and the Property in accordance with the Conservation Instrument.

16. Warranty. Grantor represents and warrants that there is no outstanding mortgage, lien, encumbrance, or other interest in the Property which has not been expressly subordinated to this Conservation Easement, and that, except for another Conservation Easement established in accordance with the Conservation Instrument and which is not adverse to the Conservation Easement established herein, the Property is not subject to any other easement or interest that is adverse to or is not subordinate to this Conservation Easement.

17. Additional Interests. Except as permitted by this Conservation Easement or the Conservation Instrument, Grantor shall not grant any additional interest in the Property, nor shall Grantor grant, transfer, abandon, or relinquish any water or water right associated with the Property, including without limitation any Easement Waters, without the prior written authorization of Grantee and third party beneficiaries CDFG (where CDFG is not Grantee) and USFWS. Such consent may be withheld if the proposed interest or transfer is inconsistent with the purposes of this Conservation Easement and the Conservation Instrument or will impair or interfere with the conservation values of the Property. This Section shall not prohibit the transfer of a fee title or leasehold interest in the Property that is otherwise subject to and complies with the terms of this Conservation Easement.

18. Third-Party Beneficiaries and Access. Grantor and Grantee acknowledge that where CDFG or USFWS are neither Grantor nor Grantee, each is a third-party beneficiary of

this Conservation Easement with rights of access to the Property for monitoring or conservation activities contemplated by this Conservation Easement or the Conservation Instrument, and with rights to enforce all of the provisions of this Conservation Easement.

19. General Provisions.

19.1 Controlling Law. The interpretation and performance of this Conservation Easement shall be governed by the laws of the State of California and applicable Federal law including the ESA.

19.2 Liberal Construction. Any general rule of construction to the contrary notwithstanding, this Conservation Easement shall be liberally construed in favor of the deed to effect the purposes of this Easement and the policy and purpose of Civil Code §815, *et seq.* If any provision in this instrument is found to be ambiguous, an interpretation consistent with the purposes of this Conservation Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

19.3 Severability. If any provision of this Easement or the application thereof is found to be invalid the remaining provisions of this Easement or the application of such provisions other than that found to be invalid shall not be affected thereby.

19.4 Entire Agreement. This instrument and the Conservation Instrument incorporated by reference herein, including all of the exhibits thereto, together set forth the entire agreement of the parties and supersede all prior discussions, negotiations, understandings, or agreements relating to the Conservation Easement, all of which are merged herein. No alteration or variation of this instrument shall be valid or binding unless contained in an amendment in accordance with the provisions herein.

19.5 No Forfeiture. Nothing contained herein will result in a forfeiture or reversion of Grantor's title in any respect.

19.6 Successors. The covenants, terms, conditions, and restrictions of this Conservation Easement Deed shall be binding upon, and inure to the benefit of, the parties hereto and their respective personal representatives, heirs, successors, and assigns and shall constitute a servitude running in perpetuity with the Property.

19.7 Termination of Rights and Obligations. A party's rights and obligations under this Conservation Easement terminate upon transfer of the party's interest in the Conservation Easement or Property, except that liability for acts, omissions or breaches occurring prior to transfer shall survive transfer.

19.8 Captions. The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon its construction or interpretation.

19.9 Counterparts. The parties may execute this instrument in two or more counterparts, which shall, in the aggregate, be signed by both parties; each counterpart shall

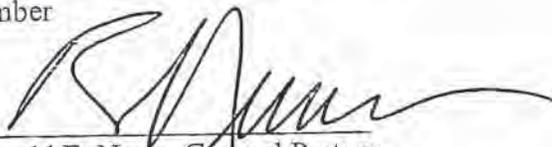
be deemed an original instrument as against any party who has signed it. In the event of any disparity between the counterparts produced, the recorded counterpart shall be controlling.

IN WITNESS WHEREOF, Grantor has executed and delivered this Conservation Easement Deed as of the day and year first above written.

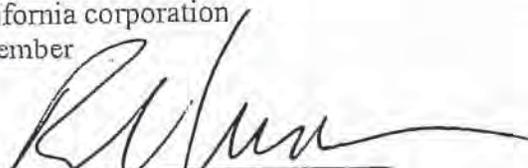
“GRANTOR”
VAQUERO FARMS CONSERVATION, LLC,
a California limited liability company

By: The Vineyards at Marsh Creek, LLC,
a California limited liability company
Its Sole Member

By: Ronald Nunn Family Limited Partnership,
a California limited partnership
Its Member

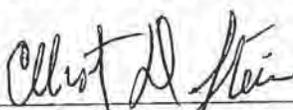
By: 
Ronald E. Nunn, General Partner

By: Cantua Investors, Inc.,
a California corporation
Its Member

By: 
Ronald Nunn, President

By: Blackhawk Vineyard Partners, Inc.,
a California corporation
Its Member

By: 
Stephen P. Beinke, President

By: 
Elliot D. Stein, Treasurer

"GRANTEE"

AGRICULTURAL-NATURAL RESOURCES TRUST OF
CONTRA COSTA COUNTY, a California public benefit
corporation

By: Edward P. Meyer

Its: SECRETARY - TREASURER

Approved as to Form:	United States Department of the Interior for the United States Fish and Wildlife Service By: <u>Cliff J. Jorgensen</u> Its: <u>Acting AFS, ESP-SFWO</u>
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CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of CONTRA COSTA }

On 1-28-08 before me, CATHERINE HOOVER
Date Here Insert Name and Title of the Officer

personally appeared RONALD E MURPHY
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Catherine Hoover
Signature of Notary Public



Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer Is Representing: _____

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer Is Representing: _____

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of CONTRA COSTA }

On 1-28-08 before me, CATHERINE HOOVER
Date Here Insert Name and Title of the Officer

personally appeared STEPHEN P. BEINKE & ELLIOT D. STEIN
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Catherine Hoover
Signature of Notary Public



Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

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Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer Is Representing: _____

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer Is Representing: _____

State of California)
County of Contra Costa)

CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

On January 30, 2008 before me, Roxann L. Crosby, Notary Public,
(here insert name and title of the officer)

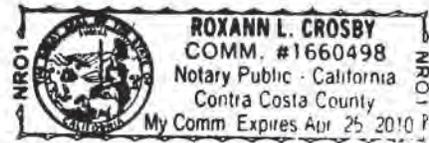
personally appeared Edward P. Meyer

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is are subscribed to the within instrument and acknowledged to me that he she they executed the same in his her their authorized capacity (ies), and that by his her their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Roxann L. Crosby



(Seal)

OPTIONAL INFORMATION

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a document titled/for the purpose of Conservation Easement Deed

containing 14 pages, and dated Dec. 18, 2007

The signer(s) capacity or authority is are as:

- Individual(s)
 Attorney-in-Fact
 Corporate Officer(s); _____
Titles(s)

- Guardian/Conservator
 Partner - Limited/General
 Trustee(s)
 Other: _____

representing: _____
Name(s) of Person(s) or Entity(ies) Signer is Representing

Additional Information	
Method of Signer Identification	
Proved to me on the basis of satisfactory evidence: <input type="checkbox"/> form(s) of identification <input type="checkbox"/> credible witness(es)	
Notarial event is detailed in notary journal on: Page # _____ Entry # _____	
Notary contact: _____	
Other	
<input type="checkbox"/> Additional Signer(s)	<input type="checkbox"/> Signer(s) Thumbprint(s)
<input type="checkbox"/> _____	

**Exhibit A
to
Conservation Easement Deed**

[Legal description]

MAY 9, 2005
JOB NO.: 349-35

LEGAL DESCRIPTION
936-ACRE MITIGATION PARCEL
CONTRA COSTA COUNTY, CALIFORNIA

REAL PROPERTY, SITUATE IN THE UNINCORPORATED TERRITORY OF THE COUNTY OF CONTRA COSTA, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

BEING A PORTION OF THAT CERTAIN PARCEL OF LAND GRANTED TO VAQUERO FARMS, INC., BY DEED RECORDED FEBRUARY 13, 1970, IN BOOK 6065 OF OFFICIAL RECORDS, AT PAGE 779, IN THE OFFICE OF THE COUNTY RECORDER OF CONTRA COSTA COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHERN LINE OF SAID PARCEL OF LAND, SAID POINT BEING THE SOUTHEASTERN CORNER OF SECTION 25, TOWNSHIP 1 SOUTH, RANGE 2 EAST, MOUNT DIABLO MERIDIAN;

THENCE, FROM SAID POINT OF BEGINNING, ALONG THE BOUNDARY LINE OF SAID PARCEL OF LAND, THE FOLLOWING TWELVE (12) COURSES:

- 1) NORTH 00°29'09" EAST 694.32 FEET,
- 2) NORTH 89°16'43" WEST 340.21 FEET,
- 3) NORTH 46°13'07" WEST 1,900.00 FEET,
- 4) NORTH 49°48'31" WEST 1,176.00 FEET,
- 5) SOUTH 84°28'17" WEST 840.00 FEET,
- 6) NORTH 10°16'43" WEST 800.00 FEET,
- 7) NORTH 87°56'29" EAST 495.00 FEET,
- 8) NORTH 55°16'17" EAST 1,993.00 FEET,
- 9) NORTH 00°43'17" EAST 380.00 FEET,
- 10) NORTH 37°16'43" WEST 525.00 FEET,
- 11) NORTH 00°43'17" EAST 1,025.82 FEET, AND
- 12) SOUTH 89°16'04" EAST 7,066.47 FEET TO A POINT ON THE EASTERN LINE OF SECTION 19, TOWNSHIP 1 SOUTH, RANGE 3 EAST, MOUNT DIABLO MERIDIAN;

THENCE, ALONG SAID EASTERN LINE, AND THE EASTERN LINE OF SECTION 30,
TOWNSHIP 1 SOUTH, RANGE 3 EAST, MOUNT DIABLO MERIDIAN, SOUTH 00°33'30"
WEST 1,811.25 FEET;

THENCE, LEAVING SAID EASTERN LINE, SOUTH 88°14'32" EAST 2,116.33 FEET;

THENCE, SOUTH 00°33'30" WEST 1,112.87 FEET;

THENCE, SOUTH 88°14'32" EAST 1,861.96 FEET;

THENCE, NORTH 00°33'30" EAST 590.10 FEET;

THENCE, NORTH 28°57'28" EAST 171.99 FEET;

THENCE, SOUTH 88°14'32" EAST 200.00 FEET;

THENCE, NORTH 23°20'25" EAST 192.50 FEET;

THENCE, NORTH 53°35'09" WEST 128.00 FEET;

THENCE, SOUTH 34°52'23" WEST 96.00 FEET;

THENCE, NORTH 50°40'14" WEST 455.80 FEET;

THENCE, NORTH 64°08'48" EAST 184.29 FEET;

THENCE, SOUTH 65°35'51" EAST 365.00 FEET;

THENCE, SOUTH 21°50'07" EAST 78.78 FEET;

THENCE, SOUTH 88°14'32" EAST 939.04 FEET TO A POINT ON THE EASTERN
LINE OF SECTION 29, TOWNSHIP 1 SOUTH, RANGE 3 EAST, MOUNT DIABLO
MERIDIAN;

THENCE, ALONG SAID EASTERN LINE, SOUTH 00°25'31" WEST 1,610.73 FEET TO
A POINT ON THE NORTHWESTERN LINE OF VASCO ROAD, AS SAID NORTHWESTERN
LINE IS SHOWN AND SO DESIGNATED ON THAT CERTAIN RECORD OF SURVEY, NO.
2223, RECORDED OCTOBER 3, 1997, IN BOOK 112 OF LICENSED SURVEYORS MAPS
AT PAGE 22, IN THE OFFICE OF THE COUNTY RECORDED OF CONTRA COSTA
COUNTY;

THENCE, ALONG SAID NORTHWESTERN LINE THE FOLLOWING FOUR (4) COURSES:

- 1) SOUTH 71°59'40" WEST 1.24 FEET,
- 2) NORTH 00°25'56" EAST 142.34 FEET,
- 3) SOUTH 56°00'57" WEST 443.07 FEET, AND
- 4) SOUTH 29°14'36" WEST 397.19 FEET TO A POINT ON THE SOUTHERN LINE OF SAID PARCEL OF LAND;

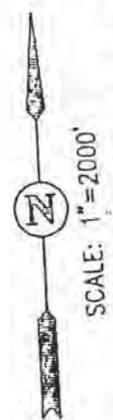
THENCE, ALONG SAID SOUTHERN LINE, THE FOLLOWING THREE (3) COURSES:

- 1) NORTH 88°06'06" WEST 9,882.51 FEET,
- 2) SOUTH 01°36'57" WEST 2,609.60 FEET, AND
- 3) NORTH 89°27'23" WEST 59.64 FEET TO SAID POINT OF BEGINNING.

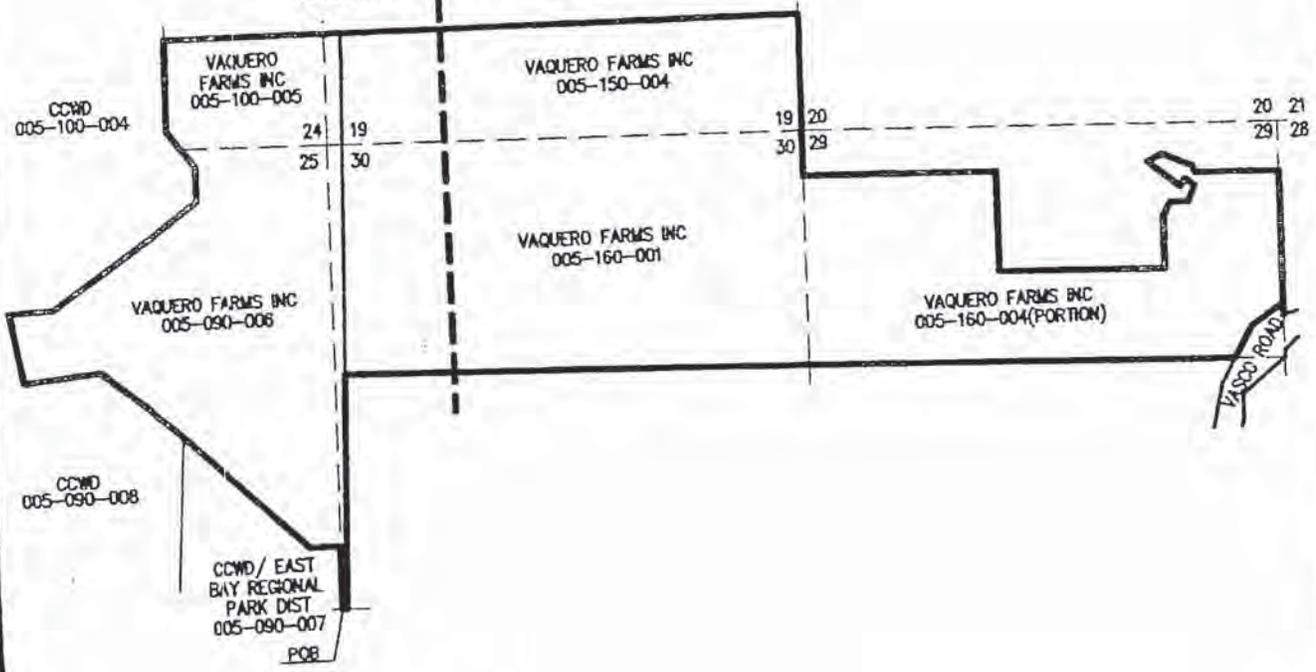
CONTAINING 936.00 ACRES OF LAND, MORE OR LESS.

END OF DESCRIPTION

CHRISTOPHER S. HARMISON, P.L.S.
L.S. NO. 7176
EXPIRES: DECEMBER 31, 2005



SHEET 2 | SHEET 3



INDEX SHEET

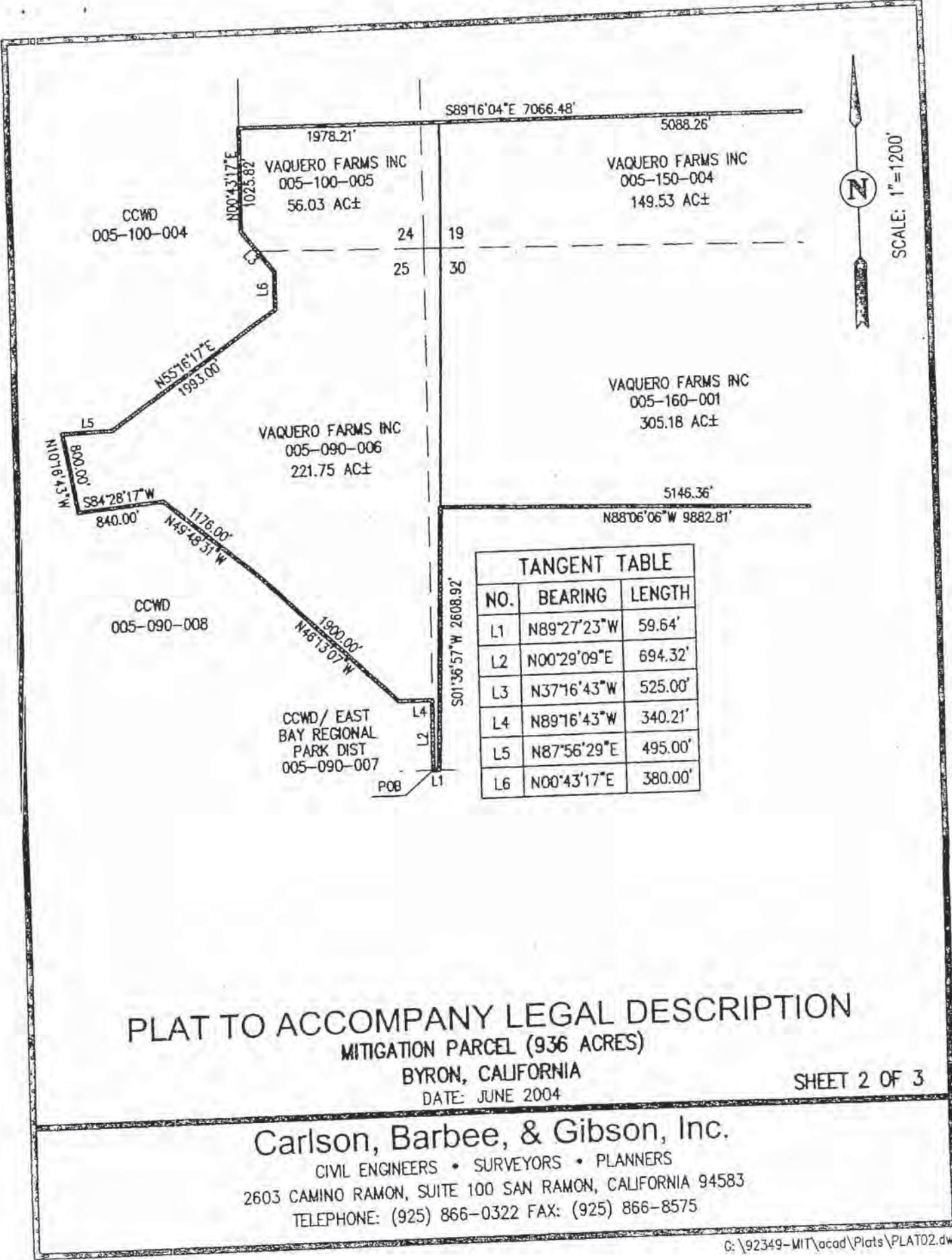
PLAT TO ACCOMPANY LEGAL DESCRIPTION
 MITIGATION PARCEL (936 ACRES)
 CONTRA COSTA COUNTY, CALIFORNIA
 DATE: JULY 2004

SHEET 1 OF 3

Carlson, Barbee, & Gibson, Inc.

CIVIL ENGINEERS • SURVEYORS • PLANNERS
 6111 BOLLINGER CANYON ROAD, SUITE 150 SAN RAMON, CALIFORNIA 94583
 TELEPHONE: (925) 866-0322 FAX: (925) 866-8575

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S89°16'04"E 7066.48'

5088.26'

1978.21'

VAQUERO FARMS INC
005-100-005
56.03 AC±

VAQUERO FARMS INC
005-150-004
149.53 AC±

CCWD
005-100-004

24 19
25 30

VAQUERO FARMS INC
005-090-006
221.75 AC±

VAQUERO FARMS INC
005-160-001
305.18 AC±

CCWD
005-090-008

CCWD/ EAST
BAY REGIONAL
PARK DIST
005-090-007

TANGENT TABLE		
NO.	BEARING	LENGTH
L1	N89°27'23"W	59.64'
L2	N00°29'09"E	694.32'
L3	N37°16'43"W	525.00'
L4	N89°16'43"W	340.21'
L5	N87°56'29"E	495.00'
L6	N00°43'17"E	380.00'

PLAT TO ACCOMPANY LEGAL DESCRIPTION
MITIGATION PARCEL (936 ACRES)
BYRON, CALIFORNIA
DATE: JUNE 2004

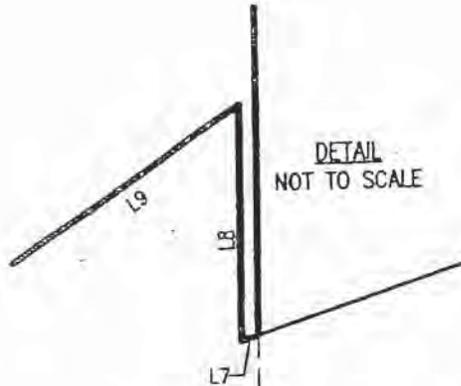
SHEET 2 OF 3

Carlson, Barbee, & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
2603 CAMINO RAMON, SUITE 100 SAN RAMON, CALIFORNIA 94583
TELEPHONE: (925) 866-0322 FAX: (925) 866-8575

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SCALE: 1"=1200'



TANGENT TABLE		
NO.	BEARING	LENGTH
L1	N28°57'28"E	171.99'
L2	S88°14'32"E	200.00'
L3	N23°20'25"E	192.50'
L4	N53°35'09"W	128.00'
L5	S34°52'23"W	96.00'
L6	N50°40'14"W	455.80'
L7	S71°59'40"W	1.19'
L8	N00°25'56"E	142.34'
L9	S56°00'57"W	443.07'
L10	S29°14'36"W	397.19'
L11	N64°08'48"E	184.29'
L12	S65°35'51"E	365.00'
L13	S21°50'07"E	78.78'
L14	S88°14'32"E	939.28'



PLAT TO ACCOMPANY LEGAL DESCRIPTION
 MITIGATION PARCEL (936 ACRES)
 BYRON, CALIFORNIA
 DATE: JUNE 2004

SHEET 3 OF 3

Carlson, Barbee, & Gibson, Inc.
 CIVIL ENGINEERS • SURVEYORS • PLANNERS
 2603 CAMINO RAMON, SUITE 100 SAN RAMON, CALIFORNIA 94583
 TELEPHONE: (925) 866-0322 FAX: (925) 866-8575

**Exhibit B
to
Conservation Easement Deed**

[Vaquero Grant Deed]

RECORDING REQUESTED BY, AND
WHEN RECORDED MAIL TO:

NEUMILLER & BEARDSLEE
A PROFESSIONAL CORPORATION
POST OFFICE BOX 20
STOCKTON, CALIFORNIA 95201-3020

WE HEREBY CERTIFY THIS TO BE A TRUE
AND CORRECT COPY OF THE ORIGINAL
DOCUMENT RECORDED.

3-3-05
SERIES # 05-72835
OF OFFICIAL RECORDS,
Contra Costa COUNTY
OLD REPUBLIC TITLE CO.
BY [Signature]

MAIL TAX STATEMENTS TO:

SPACE ABOVE THIS LINE FOR RECORDER'S USE

DOCUMENTARY TRANSFER TAX \$ See affd

...Computed on the consideration or value of property
conveyed; OR

...Computed on the consideration or value less liens or
encumbrances remaining at time of sale.

Signature of Declarant or Agent Determining Tax

GRANT DEED

FOR VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

VAQUERO FARMS, INC., a California corporation ("GRANTOR")

hereby GRANTS to

VAQUERO FARMS CONSERVATION, LLC, a California limited liability company
("GRANTEE")

the real property in the County of Contra Costa, State of California, described as follows:

SEE EXHIBIT "A" ATTACHED HERETO AND INCORPORATED HEREIN BY
REFERENCE ("PROPERTY")

SUBJECT TO THE FOLLOWING RESERVATIONS BY GRANTOR:

1. Wind and Air Rights. Grantor shall retain all right, interest, and title to all wind and air rights associated with the Property.
2. Surface Rights Incidental to Wind and Air Rights. Grantor shall also retain an easement in gross with respect to the Property, which shall be limited to the following:
 - (a) Use and Operation of Wind Parks. To maintain, operate, use, manage, and repair on the Property those certain wind-powered electrical generating facilities, which consist of the following and are hereafter referred to as a

“Wind Park” or “Wind Parks”: wind turbine generators, together with any associated collection and transmission grid and power conditioning equipment as necessary for the transmission of electricity; and all related assembly and operations buildings, facilities, equipment, or other improvements necessary to operate and maintain such Wind Parks.

- (b) Power Generated on Property. To transmit, condition, and interconnect power generated by one or more Wind Parks on the Property, and to maintain and operate transmission lines and substation equipment as may be necessary in furtherance thereof.
 - (c) Ingress and Egress. To have ingress and egress rights over the Property, in order to exercise its rights set forth above, which shall be limited to: existing dirt roads that traverse the Property and over and upon such lands in any area approved by Grantee for such purpose.
 - (d) Limitations. In no event shall the Wind Park rights reserved by Grantor encompass more than the total acreage representing ten percent (10%) of the Property.
3. Reservation Agreement. Grantor and Grantee have entered into a Reservation Agreement (“Agreement”), effective as of the date set forth below, whereby the rights and obligations of Grantor and Grantee, pursuant to the reservations provided herein, are further detailed.
4. Conservation Easement. Grantee intends to negotiate and execute a Conservation Easement Deed regarding the Property with The State of California acting through its Department of Fish and Game, a subdivision of the California Resources Agency – or – a non-profit organization satisfying requirements of Section 815 of the California Civil Code (collectively the “State”). Grantor shall be bound by the terms and conditions set forth in said Conservation Easement negotiated and executed by Grantee and the State. Furthermore, pursuant to the Agreement, Grantor shall, at Grantee’s request, execute the deed conveying said Conservation Easement over its easement in gross retained herein with respect to the Property.

Dated: February 14, 2005

SIGNATURES CONTAINED ON FOLLOWING PAGE

GRANTOR:

VAQUERO FARMS, INC.
A California Corporation

By: [Signature]
Name: LARRY ENOS
Title: EXEC. V-PRES

Dated: 2/22/05

GRANTEE:

VAQUERO FARMS CONSERVATION, LLC
A California Limited Liability Company

By: RONALD NUNN FAMILY LIMITED PARTNERSHIP,
A California limited partnership

By: _____
RONALD E. NUNN
General Partner

Dated: _____

By: CANTUA INVESTORS, INC., a
California corporation

By: _____
RONALD E. NUNN
President

Dated: _____

By: Blackhawk Vineyard Partners, Inc., a California corporation

BY: _____
Stephen P. Beinke, President

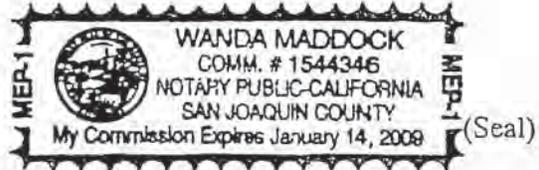
BY: _____
Elliot D. Stein, Treasurer

STATE OF CALIFORNIA)
)
COUNTY OF San Joaquin)

On February 23, 2005, before me, Wanda Maddock, a Notary Public, personally appeared Larry Enos, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature Wanda Maddock



STATE OF CALIFORNIA)
)
COUNTY OF _____)

On _____, before me, _____, a Notary Public, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature _____

GRANTOR:

VAQUERO FARMS, INC.
A California Corporation

By: [Signature]
Name: LARRY ENOS
Title: EXEC. V-PRES

Dated: 2/22/05

GRANTEE:

VAQUERO FARMS CONSERVATION, LLC
A California Limited Liability Company

By: RONALD NUNN FAMILY LIMITED PARTNERSHIP,
A California limited partnership

By: [Signature]
RONALD E. NUNN
General Partner

Dated: 3-1-05

By: CANTUA INVESTORS, INC., a
California corporation

By: [Signature]
RONALD E. NUNN
President

Dated: 3-1-05

By: Blackhawk Vineyard Partners, Inc., a California corporation

BY: [Signature]
Stephen P. Beinke, President

BY: [Signature]
Elliot D. Stein, Treasurer

382687.2

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

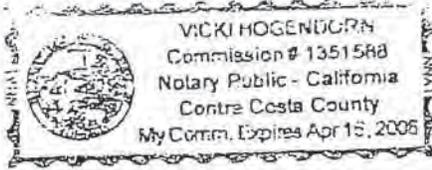
State of California

County of Costa Costa } ss.

On February 28 2005 before me, Vicki Hogendorn Notary Public
personally appeared Stephen P. Amick & E. Oct D. Speer
Name and Title of Officer (e.g., "Jane Doe, Notary Public")
Name(s) of Signer(s)

- personally known to me
- proved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.

Vicki Hogendorn
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Grant Deed, Navajo Farms Inc.

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner — Limited General
- Attorney-in-Fact
- Trustee
- Guardian or Conservator
- Other: _____

Signer Is Representing: _____

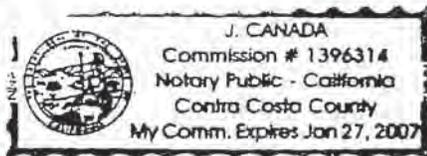


State of CALIFORNIA
County of CONTRA COSTA

On MARCH 1, 2005, before me, J. Canada, Notary Public, personally appeared RONALD E. NORD, personally known to me or proved to me on the basis of satisfactory evidence, to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

Witness my hand and official seal.

J. Canada
Notary Public



**Exhibit C
to
Conservation Easement Deed**

[Long Term Management Plan]

Prepared for:

Vineyards at Marsh Creek LLC
3820 Blackhawk Road
Danville, CA 94526
(925) 736-1571

Prepared by:

Sycamore Associates LLC
2099 Mt. Diablo Blvd., Suite 204
Walnut Creek, CA 94596
(925) 279-0580

May 26, 2005

**LONG-TERM MANAGEMENT PLAN
VAQUERO FARMS CONSERVATION EASEMENT,
CONTRA COSTA COUNTY, CALIFORNIA**

USFWS FILE NUMBER 1-1-04-F-0063, USACE FILE NUMBER 200300007

CDFG FILE NUMBER 1600-2004-0177-3, RWQCB WDID#5B07CR00031

The information provided in this document is intended solely for the use and benefit of Vineyards at Marsh Creek, LLC.

No other person or entity shall be entitled to rely on the services, opinions, recommendations, plans or specifications provided herein, without the express written consent of Sycamore Associates LLC, 2099 Mt. Diablo Boulevard, Suite 204, Walnut Creek, CA 94596.

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1.0 INTRODUCTION

This Long Term Management Plan for the Vaquero Farms 936-acre Conservation Easement (Conservation Easement) is being prepared in accordance with the Biological Opinion issued by the U.S. Fish and Wildlife Service on October 29, 2004 (Biological Opinion [BO] No. 1-1-04-F-0063) for The Vineyards at Marsh Creek project.

Pursuant to the BO and other permits, the project proponent (Vineyards at Marsh Creek LLC or "VMC") will be responsible for constructing certain new wetlands on the Conservation Easement property. The details regarding the construction, monitoring and evaluation of success of those new wetlands are detailed in the *Wetland and Special-Status Species Mitigation and Monitoring Plan for The Vineyards at Marsh Creek Project at Vaquero Farms* (MMP) (Sycamore Associates 2005). Those tasks will be the responsibility of VMC.

Long-term management of the 936-acre easement area is described herein. Implementation of this Long Term Management Plan will be the responsibility of the easement holder, the Agricultural Trust of Contra Costa County ("Trust"). VMC and Trust understand their respective responsibility including the importance of VMC transitioning the created wetlands to Trust after five years, or when agency performance standards for the created wetlands are satisfied.

Long-term management and monitoring responsibilities of the Conservation Easement area will include:

- Fire hazard reduction and management through cattle grazing
- Annual administration, *i.e.* accounting, funding management, educational materials, and management of grazing leases
- Replacement/repair of fences and gates for perimeter and managed grazing areas—complete replacement of four-strand fencing will likely occur approximately every 20 years
- Maintenance of permanent signage
- Maintenance of stock ponds (*i.e.* berm repairs) and spring boxes for watering cattle - this may include periodic sediment removal in the created wetland areas to ensure long-term sustainability
- Monitoring of Conservation Easement compliance, including inspections of the site three times a year (April/May, August, and December) by a qualified biologist to evaluate adherence to the long-term management plan and identify and employ adaptive management strategies as necessary

This Long Term Management Plan assumes that the wetlands created within the Conservation Easement area have met the success criteria described in the MMP during the five-year monitoring period, or extended monitoring period as required by the MMP.

2.0 VAQUERO FARMS CONSERVATION EASEMENT AREA

The 936-acre Conservation Easement is comprised of 4 parcels (APN Numbers 005-100-005, 005-090-006, 005-150-004, and 005-160-001), and a portion of one additional parcel (APN Number 005-160-004). These lands are part of a larger, approximately 2,200-acre collection of parcels known as “Vaquero Farms.” The Conservation Easement is located in southeastern Contra Costa County, California, approximately one-quarter mile north of Vasco Caves, 1.5 miles west of Byron Hot Springs and three miles north of Brushy Peak. The Conservation Easement borders the eastern boundary of the protected Los Vaqueros Watershed lands (Figure 1). Identified vegetation communities include non-native annual grassland, freshwater marsh and seep, and alkali meadow and grassland. Non-native annual grassland is the dominant vegetation community on site. Alkali meadow is present in the valley bottoms where soil characteristics are predominantly alkaline. Freshwater marsh/seep vegetation is present in stock ponds, seep fed streams, and also in valley bottoms where soil chemistry exhibits a relatively lower, more neutral pH.

The Conservation Easement will be managed in perpetuity as aquatic and associated upland and dispersal habitat for the federally-listed Threatened California red-legged frog (*Rana aurora draytonii*) and federally-listed Threatened California tiger salamander (*Ambystoma californiense*), and as foraging and denning habitat for the federally-listed Endangered San Joaquin kit fox (*Vulpes macrotis mutica*) and state Species of Concern western burrowing owl (*Athene cunicularia hypugaea*). It will also be managed as potential habitat for the federally-listed Threatened vernal pool fairy shrimp (*Branchinecta lynchi*).

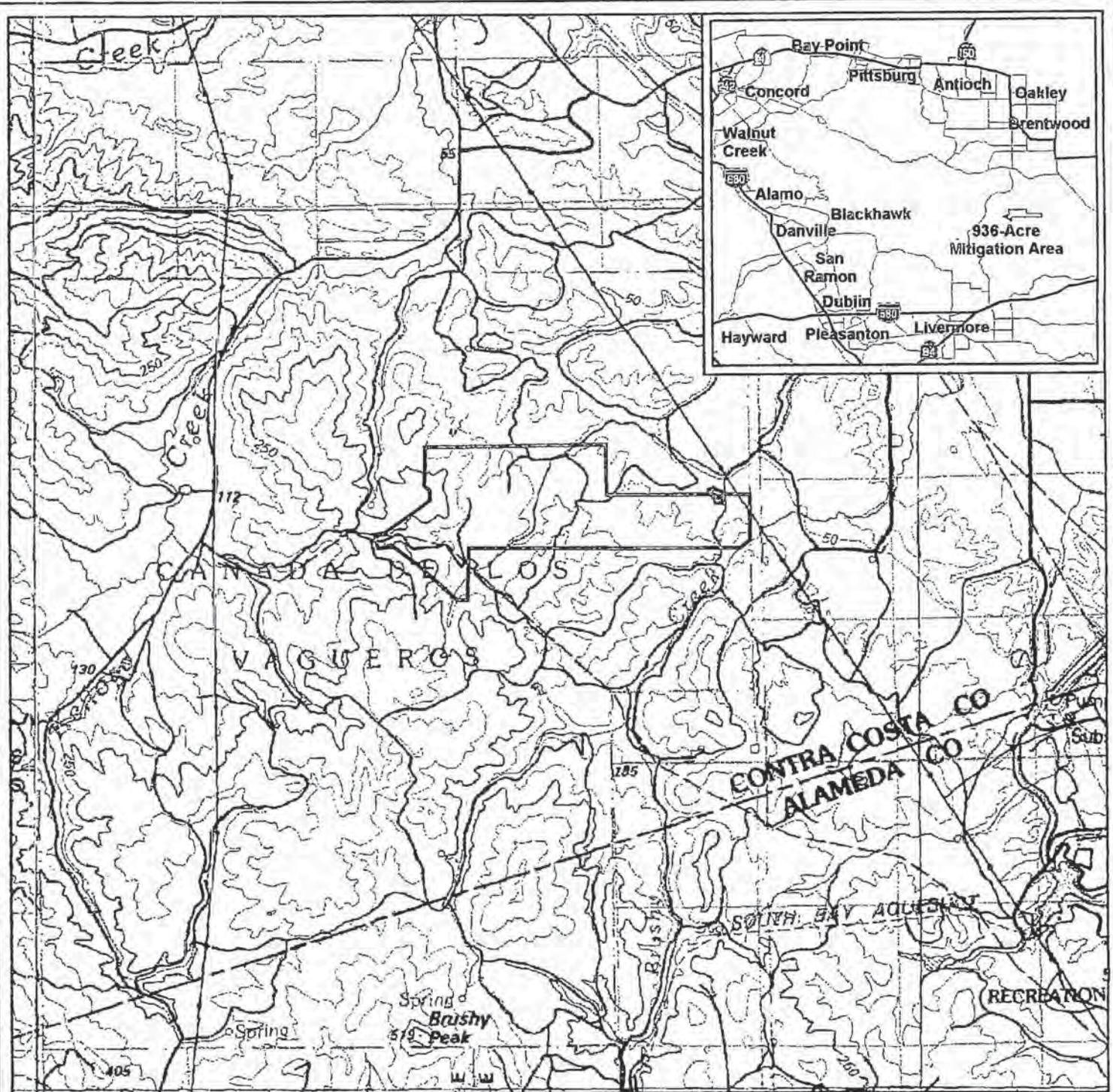
Topography on the Conservation Easement consists of moderately sloping, rolling hills dominated by non-native annual grassland typical of the region. Elevation ranges from approximately 550 to 1,000 feet above sea level and increases from east to west. Several intermittent and perennial drainages are present within the property boundaries and generally flow in a northeasterly direction. Approximately 36,078 linear feet (about 1.7 acres) of existing drainages and creek (including 353 linear feet of Brushy Creek) and 2.25 acres of existing wetlands will be preserved within the 936-acre Conservation Easement area. In addition, as described above new wetlands totaling approximately 1.33 acres will be created in the Conservation Easement area.

Land uses on the Conservation Easement include livestock grazing and electricity production via wind turbines. Cattle movement is permitted between the adjacent Los Vaqueros Watershed and Vaquero Farms when the property boundary gates are opened. Wind turbines occupy ridge tops within three of the parcels. Wind turbine rights are granted by lease until 2022. An electrical substation, wind turbine maintenance building, and scattered stock ponds for livestock watering are also present on the property. Cattle pastures and wind-produced electricity farms border the property to the east and south. Los Vaqueros watershed lands border to the west and a sand quarry borders to the north.

Given that the site provides suitable habitat for many special-status species and is contiguous to preserved open space lands, the Conservation Easement contributes to

Sycamore Associates LLC – Long-Term Management Plan Vaquero Farms Conservation Easement, Contra Costa County, California

preservation of valuable wildlife movement corridors in the region. In addition to providing California tiger salamander breeding and upland aestivation habitat, Vaquero Farms provides connectivity between on-site breeding ponds and other breeding populations of California tiger salamanders reported on adjacent undeveloped lands. The property provides opportunities for juveniles to disperse from on-site breeding ponds to adjacent preserved lands and provides upland aestivation sites for individuals dispersing from off-site breeding ponds. The mitigation site also provides connectivity for California red-legged frog populations in the region to breed and disperse to neighboring refugia habitat. Open space surrounds the site, which is situated within a potential movement corridor for San Joaquin kit fox. Kit fox are known to historically occur north, south, east and west of the property. Preservation of the property contributes to maintaining this corridor linkage for San Joaquin kit fox and other wildlife species, including burrowing owl, golden eagle (*Aquila chrysaetos*), a Fully Protected California Species of Special Concern, American badger (*Taxidea taxus*), a California Species of Special Concern, and bobcat (*Felis rufus*), among others.



Legend

 936-Acre Mitigation Area

Figure 1
Location of Vaquero Farms
936-Acre Mitigation Site
The Vineyards at Marsh Creek
The Vineyards at Marsh Creek LLC
 Contra Costa County, California

1:63,360 5/13/05
 1 inch equals 1 miles

0 1 2 Miles



This document provided for the sole use of the Vineyards at Marsh Creek LLC. This document not intended for detail design work. USGS quadrangles from MapTech Terrain Professional (1998).

 Sycamore Associates LLC
 2099 Mt. Diablo Blvd, Suite 204
 Walnut Creek, CA 94596
 925.279.0580
 www.sycllc.com

2.1 Administration and Oversight

The Trust will administer this Long Term Management Plan using funds generated from an endowment funded by VMC. To ensure compliance with the Vaquero Farms Conservation Easement Deed and this Long Term Management Plan, Trust will perform an annual accounting for the endowment fund, and process fees and payments related to long-term management of the 936-acre Conservation Easement lands, coordination of an integrated pest management (IPM) program, maintaining records for both the site visits and IPM program and the record keeping and employment of adaptive management measures if they are necessary. Agency communication will be conducted by the Trust as needed and may include telephone calls, email or other correspondence related to management and coordination of the Conservation Easement lands. Additionally, Trust will make three site visits per year.

The anticipated annual cost for long-term management, monitoring and reporting at Vaquero Farms is estimated as follows:

	<u>Annual Expense</u>	<u>Replacement or Contingency</u>
1. Grazing Regime ¹	\$4,440	
2. Fencing	\$4,680	\$11,000
3. Aquatics	\$2,190	\$2,400
4. Field & Vegetation	\$495	
5. Species Observation	\$270	
6. Integrated Pest Management	\$270	\$2,500
7. Exotic Predator Control	\$270	\$2,500
8. Adaptive Management	\$270	\$3,000
9. Trash Removal	\$270	\$200
10. Signage	\$270	\$500
11. Road Maintenance	\$270	\$500
12. Fire Breaks ²	\$270	\$200
13. Administration	\$7,125	\$1,500
14. Taxes, insurance & Audit	<u>\$2,000</u>	
	\$23,090	<u>\$24,300</u>

The total annual cost for performing the responsibilities called for in this Long Term Management Plan for the Vaquero farms property is estimated at \$47,390.

¹ Costs for all inspections by certified Biologist are assumed into the tri-annual site visits and are loaded into the figure shown as Grazing Regime. On each visit the Biologist will inspect and/or focus on Grazing, Aquatics, Vegetation, Species, IPM, Predator Control and Adaptive Management.

² Road maintenance and fire breaks are responsibility of landowner in Long Term Management Plan, but will be inspected tri-annually and covered in contingency.

2.2 TRI-ANNUAL COMPLIANCE MONITORING

Commencing in 2005, Trust will inspect the Conservation Easement lands three times annually (April/May, August, and December) to evaluate adherence to the Conservation Easement Deed and this Long Term Management Plan, and to employ adaptive management strategies as necessary. The restorationists responsible for constructing the wetlands for VMC at Vaquero Farms will provide as-built drawings and will update or otherwise convey relevant information and documentation to the Trust to ensure long-term management requirements are understood and anticipated. Trust will take full responsibility of the "created wetlands" once VMC meets performance standards set forth in permits from USACE and CDFG, anticipated to be five years after the wetlands are created. Tri-Annual Compliance Monitoring will be funded through the endowment fund.

Tri-annual (April/May, August, and December) inspections of the site will include the following:

- Assessment of all fences on the property, and the need for repair or replacement of any fence sections in disrepair.
- Exotic predator control in preserved and created wetlands (*i.e.* bullfrogs [*Rana catesbeiana*] and mosquito fish [*Gambusia* sp.], *etc.*) if necessary
- Documentation of special-status species observations (*i.e.* state Species of Concern western burrowing owl and federally-listed Threatened California tiger salamander and California red-legged frog)
- Grazing management monitoring including a visual assessment of the Conservation Easement area for vegetative cover, vigor and height of the grasslands to assess the habitat quality for crownscale, California tiger salamander, California red-legged frog, San Joaquin kit fox, and burrowing owl.

All observations will be recorded on field notes. On a yearly basis, the land manager or grazer will be asked to submit a form outlining the annual/seasonal stocking rate(s) employed, as well as describing any annual or seasonal changes in cattle, stocking rates, or environmental conditions that might affect the carrying capacity of the Conservation Easement. These observations will be analyzed and presented in the annual summary to provide cohesiveness in the management from year to year.

2.3 INTEGRATED PEST MANAGEMENT PROGRAM

Invasive Species Control

The Conservation Easement will be grazed in accordance with Section 2.7 (Grazing Regime), which is described below. Implementation of this grazing plan is expected to adequately control invasive weed species. Trust will evaluate the effectiveness of the grazing in controlling weeds during the Tri-Annual Compliance Monitoring. If it finds that additional weed control is necessary, Trust will identify weed species that need additional control and implement changes to the grazing plan and/or implement additional invasive species control measures in accordance with the IPM Program.

Weed species should be controlled if they begin to threaten or displace the created and existing habitats of Vaquero Farms that support or have potential to support: California tiger salamander, California red-legged frog, San Joaquin kit fox, vernal pool fairy shrimp, and western burrowing owl. Innocuous, naturalized weeds that do not threaten native species should be ignored. Some common invasive exotics that are currently within the project area that may become a threat include: poison hemlock (*Conium maculatum*), yellow-star thistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), and milk thistle (*Silybum marianum*).

Predator Control

Bullfrogs (*Rana catesbeiana*) have not been observed within the Conservation Easement, and are presumed absent from the site as of 2005. Perennial aquatic sites exist within and nearby the Conservation Easement which could support undesired predators of the California red-legged frog and California tiger salamander. The site (Pond 7) contains invasive, predatory mosquito fish (*Gambusia sp.*).

During the first five years of monitoring of the created wetlands pursuant to the MMP, annual surveys for bullfrogs and other predators will be performed, and if bullfrogs are found a bullfrog eradication program will be implemented.

To ensure the Conservation Easement remains free of bullfrogs and other predators, such as the Louisiana red swamp crayfish or exotic fish species, Trust will conduct predator surveys on a yearly basis. For each survey, a biologist familiar with the local herpetofauna will survey the preserved and created ponds within the Conservation Easement with a long-handled dip net. Dip net surveys will also be conducted by a Service approved biologist with a section 10(a)(1)(A) recovery permit at a small number of representative sampling sites to be determined by the biologist along on-site drainages and in the on-site portion of Brushy Creek. All species encountered will be properly keyed-out and identified to species, and all observed bullfrogs and other non-native species known to compete with the California tiger salamander and the California red-legged frog will be disposed of properly.

If predator eradication efforts are determined to be necessary, they will be scheduled to accommodate the life history of the California red-legged frog and the California tiger

salamander on site, but also at such a time that bullfrogs can be reliably detected. The U.S. Fish and Wildlife Service's *Guidance on Site Assessment and Field Surveys for California Red-legged Frogs (Rana aurora draytonii)* (1997) recommends that protocol-level focused surveys be conducted between May 1 and November 1 to minimize "disturbance of breeding frogs, eggs, or tadpoles." As such, the predator eradication surveys will be scheduled to occur in early May to minimize impacts to breeding California red-legged frog and the California tiger salamander and/or their eggs and tadpoles and to overlap with the time period when bullfrog tadpoles are most easily detectable. It is important to note that California tiger salamander larvae have been documented overwintering in perennial ponds on Los Vaqueros Watershed lands (Alvarez 2004). Therefore, predator eradication efforts carried out at any time of the year should implement measures to avoid harm to listed species.

The Trust will ensure that the predator control is implemented as described and will review the results of the predator control program to determine its effectiveness. If necessary, Trust will modify the predator control accordingly.

2.4 SIGNAGE

Signs pertaining to the sensitive habitat within the Conservation Easement will be installed by VMC. Because the Vaquero Farms property is not open to the public, minimal signage is anticipated. Signage is described in the Final MMP and changes to the precise wording are anticipated to change over time. The primary objective of signage is to restrict trespassing and identify sensitive habitats. Trust will check the integrity of the signage for damage and legibility and make a determination on replacement requirements. It is anticipated that these signs will need to be replaced every five years. Monitoring results and replacement needs will be documented in a summary of field notes annually to provide cohesiveness in the management from year to year. The monitoring and maintenance of the signage will be funded through the endowment fund.

2.5 TRASH REMOVAL

Trust will remove accumulations of trash and other unwanted debris from both terrestrial and aquatic habitats within the Conservation Easement lands during its tri-annual site visits. If trash and unwanted debris in the Conservation Easement area become a problem, Trust will work with the landowner to have it removed more frequently. All debris removal and disposal will be in accordance with state, federal, and local laws. Should illegal dumping become problematic in the future, additional signage and possibly enforcement action may become necessary. The Trash Removal Program will be funded through the endowment fund.

2.6 FENCING

Currently, VMC owns approximately 1,600 acres of Vaquero Farms, 936 acres of which comprises the Conservation Easement lands. Assuming that the grazing operator will graze the entire 1,600 acres according to the grazing management plan described herein, fencing (four-strand barbed wire and gate) will be installed by VMC around the perimeter of the 1,600-acres. Trust will check the integrity of the portion of the fence along the perimeter of the Conservation Easement during the site visits described above. It is anticipated that the fencing will be replaced every 20 years, and some portions of the fence may require repairs sooner than others. After Trust assesses the integrity of the fence, any areas requiring repair will be noted and appropriate measures will be taken to repair the fence as soon as possible. Monitoring of the fence integrity and any necessary repairs will be documented in an annual summary of field notes to provide cohesiveness in the management from year to year. The clear objective of the Long Term Management Plan is adaptive management to circumstances that cannot necessarily be fully anticipated at this time. The Trust may decide, as part of their adaptive management responsibilities, to add or retire certain sections of fence to achieve certain vegetation management (e.g. grazing) regime(s). For example, the parcel boundary shared with adjacent properties could share a grazing lease at some point in the future, thus obviating the need for a fence at this boundary. Monitoring and maintenance of the fencing will be funded through the endowment fund.

If the property immediately adjacent to Conservation Easement lands, which the grazing operator currently plans to graze according to the grazing management plan described herein, is not maintained in accordance with this grazing plan, or is used for any purpose inconsistent with the terms of this management plan, the land owner, at the request of the Trust, will install a fence separating the Conservation Easement lands from the adjacent property. Such fence would be installed at the land owner's sole expense. If a fence is erected, Trust may seek, and the land owner will pay a reasonable fee to maintain the fence. Any additional fee paid to maintain the additional fencing will be subject to the Perpetual Conservation Easement Agreement (Exhibit A). Trust may also, in its discretion, retire the fence.

2.7 GRAZING REGIME

The historical grazing regime practiced at Vaquero Farms has created conditions that currently support California tiger salamander, California red-legged frog, burrowing owl, crownscale, and potentially San Joaquin kit fox and vernal pool fairy shrimp. A similar vegetation management regime would maintain and enhance habitat for these listed species, as well as maintain and enhance the overall health of the ecosystem. To ensure this trend continues, it is important to maintain grazing on the site with a grazing regime that encourages low-stature grasslands at an average height less than 8-10 inches or approximately 600-800 pounds per acre as residual dry matter.

Carrying capacity is usually expressed in terms of "animal unit months" (or years). One animal unit month (or year) is equivalent to 1,000 pounds of grazing animal per month (or year). An individual bull, two 500-pound steers, or a cow-calf pair are equivalent to a 1,000-pound animal.

According to the current tenant, ranching practices in the past have included grazing 500 stockers between November 1 and June 15. To ensure that conditions on site are maintained as they have been in the past, the grazing regime outlined below follows similar management practices. Based on these past practices, the 936-acre Vaquero Farms property can support a carrying capacity of 155 animal units per year. If the carrying capacity is approximately 155 animal units per year across 936 acres, roughly 3 acres are needed for each 500-pound stocker, or roughly 6 acres for each bull, pair of 500-pound stockers, or calf-cow pair (Sycamore 2005). Alternatively, other animals can be employed to achieve grazing management, including but not limited to goats and sheep.

Grazing for the approximately 4.1 acres of wetlands and alkali meadow habitats on the Vaquero Farm property will exclude particularly sensitive times. The exclusion of cattle during sensitive times is expected to affect the carrying capacity negligibly, as no more than 4.1 acres (consisting of 2.5 acres of alkali meadow and no more than 1.6 acres of created wetlands) may be excluded from grazing. This would require rotating one animal unit (one bull, one calf-cow pair, or two stockers) in or out during specified periods to accommodate the no more than 4.1 acres in question. The Trust will determine how rotational grazing will be achieved.

Three distinct vegetative communities/wildlife habitats exist on the site, each with different requirements. Accordingly, recommendations for the grazing regime will vary to best meet the management objectives for each vegetative community/wildlife habitat, and will be flexible to accommodate variations in annual rainfall, and other such environmental factors. Furthermore, some modifications to grazing practices can be employed, fencing can be installed in an attempt to protect sensitive features and fencing may be removed to provide flexible grazing regime(s).

The land owner does not have a written grazing agreement with the current grazing operator. However, the grazing operator has agreed to graze the Conservation Easement lands, and adjoining property in accordance with this Grazing Regime. When the current

grazing operator ceases his grazing activities, the land owner and Trust will use their best cooperative efforts to promptly find a new grazing operator. Any and all new grazing operations will be subject to a written grazing agreement, which is subject to review and approval by Trust; which approval will not be unreasonably withheld.

2.8 FIRE BREAKS

The cattle-grazing operator pursuant to an agreement currently maintains firebreaks with the landowner. If the grazing operator ceases to maintain fire breaks, responsibility for their continued maintenance remains with the landowner and is not the responsibility of the Trust.

2.9 ROAD MAINTENANCE

The operators of the wind turbines, which are permitted by the Conservation Easement Deed, are currently responsible for maintenance of the existing roads. If the wind turbine operators cease to maintain the roads, responsibility for their continued maintenance remains with the landowner and is not the responsibility of the Trust. Construction of new roads is not anticipated.

3.0 ENDOWMENT FUND

An endowment fund agreed upon by the Trust and VMC, the project proponent, has been established for the Conservation Easement. This endowment fund is intended to fund implementation of this Long Term Management Plan in perpetuity. A copy of the Endowment Agreement is attached as Exhibit A. As part of the annual administration, all activities relating to the management of the endowment fund will be conducted. This includes invoicing of all maintenance and management activities to the fund, accounting and proper record keeping, coordination of the Integrated Pest Management (IPM) Program and Trash Removal Program, and processing of any fees or transactions as necessary. Activities related to the endowment fund will be the responsibility of the Trust.

4.0 ADAPTIVE MANAGEMENT

Monitoring is the underpinning of adaptive management. Tracking of the Conservation Easement lands allows for timely remedial actions to be implemented. Decisions and suitable changes to the long-term management strategies can be implemented as deemed necessary by the Trust in order to ensure the continued success of the habitats in the Conservation Easement. Adaptive management techniques that may be used include, but are not necessarily limited to the following:

- Removal of sediment from aquatic sites
- Repair of stock ponds / potential breeding sites for California red-legged frog and the California tiger salamander
- Changes to the Grazing Management Plan, including the fencing plan
- More frequent predator control surveys
- Predator control and eradication

Control of animals such as beavers and muskrats that are considered a potential threat to wetland areas, may be necessary. Animal damage control and activities in jurisdictional wetlands will be undertaken in accordance with any applicable regulatory requirements.

5.0 REFERENCES

- Alvarez, J.A. 2004. Overwintering California Tiger Salamander (*Ambystoma Californiense*) Larvae. *Herpetological Review* 34:344.
- Sycamore Associates, LLC, 2004. Conceptual Wetland and Special-Status Species Mitigation and Monitoring Plan for the Vineyards at Marsh Creek Project at Vaquero Farms, Contra Costa County, California.
- Sycamore Associates, LLC, 2005 (in progress). Final Wetland and Special-Status Species Mitigation and Monitoring Plan for the Vineyards at Marsh Creek Project at Vaquero Farms, Contra Costa County, California.
- United States Department of Agriculture (USDA). 1977. *Soil Survey of Contra Costa County, California*. Natural Resource Conservation Service. September.

**EXHIBIT A TO LONG-TERM MANAGEMENT PLAN
VAQUERO FARMS CONSERVATION EASEMENT
CONTRA COSTA COUNTY, CALIFORNIA**

[ENDOWMENT AGREEMENT]

PERPETUAL CONSERVATION EASEMENT ENDOWMENT AGREEMENT

This Perpetual Conservation Easement Endowment Agreement (“Agreement”) is made and entered into on June 24, 2005 (the “Effective Date”) by and between The Vineyards at Marsh Creek LLC (“Founding Contributor”) and Agricultural Trust of Contra Costa County (“Trust”).

WITNESSETH:

WHEREAS, Founding Contributor desires to have established in the Trust an endowment fund designated “Vaquero Farms Endowment Fund”,

WHEREAS, Trust is a non-profit California corporation exempt from taxation under Internal Revenue Code (“Code”) section 501(c)(3), a public charity described in section 170(b)(1)(A)(iv) of the Code, and accordingly an appropriate institution within which to establish such a conservation easement endowment,

WHEREAS, this Agreement is being executed and delivered pursuant to the Biological Opinion for Vineyards at Marsh Creek Project (1-1-04-f-0063) dated as of October 29, 2004 and prepared by the United States Fish and Wildlife Service pursuant to Section 7 of the Federal Endangered Species Act, and as authorized in a permit issued in connection with the development of The Vineyards at Marsh Creek project (the “Project”) pursuant to Section 404 of the Clean Water Act (U.S. Army Corps of Engineers File No. 200300007), water quality certification issued by the California Regional Water Quality Control Board Central Valley Region (“RWQCB”), Lake or Streambed Alteration Agreement (Notification No. 1600-2004-0177-3) issued by the California Department of Fish and Game pursuant to Section 1602 of the California Fish and Game Code, whereby certain conservation requirements will be satisfied through establishment of the Vaquero Farms Endowment Fund,

WHEREAS, Founding Contributor intends to grant to Trust a Conservation Easement Deed pursuant to section 815 of the California Civil Code conserving approximately 936 acres of land commonly known as “Vaquero Farms” (the “Conservation Easement”),

WHEREAS, Trust is A California public benefit corporation authorized to hold the Conservation Easement pursuant to section 815.3 of the California Civil Code,

WHEREAS, Sycamore Associates LLC prepared a “Long-Term Management Plan Vaquero Farms Conservation Easement, Contra Costa County California” dated May 26, 2005 (“Management Plan”) that provides for the perpetual conservation of the property subject to the Conservation Easement,

WHEREAS, the primary purpose of the Vaquero Farms Endowment Fund shall be to fund the long-term management and monitoring activities described in the Management Plan,

WHEREAS, Trust has determined that an endowment in the amount of Nine Hundred Fifty Seven Thousand Dollars (\$957,000) will provide adequate funding for carrying out the long-term management and monitoring activities described in the Management Plan, and to pay for reasonable administrative costs and fees that Trust may incur in implementing the Management Plan,

WHEREAS, Trust has determined that Trust will incur Eighteen Thousand Dollars (\$18,000) in one time set up costs, and

WHEREAS, Trust is willing and able to create and control the Vaquero Farms Endowment Fund, subject to the terms and conditions set forth in this Agreement;

NOW THEREFORE, Trust and Founding Contributor agree as follows:

1. Establishment of Endowment Fund. There is hereby established in the Trust, and as a part thereof, a fund designated the "Vaquero Farms Endowment Fund" (the "Fund") to receive contributions in the form of money, and to administer the same.
2. Purpose. The primary purpose of the Fund shall be to fund the activities described in the Management Plan.
3. Funding. The Founding Contributor shall transfer to the Trust for deposit in the Fund the amount of Nine Hundred Fifty Seven Thousand Dollars (\$957,000) upon the recordation of the Conservation Easement, which shall be recorded no later than immediately following approval of the form of the Conservation Easement by the USFWS, CDFG and RWQCB. The Trust has the discretion to accept additional funds acceptable to the Trust from time to time from Founding Contributor and from other individuals, public and private entities, and other sources to be added to the Fund, all subject to the provisions hereof. All grants, bequests and devises to the Fund shall be irrevocable once accepted by the Trust. In addition, Founding Contributor shall pay to the Trust the amount of Eighteen Thousand Dollars (\$18,000) upon the recordation of the Conservation Easement as described above to pay for one-time set up costs ("set-up fee"). The set-up fee may be retained by Trust and will not be deposited into the Fund.
4. Distribution. The annual earnings allocable to the Fund, net of the fees and expenses reasonably incurred by Trust shall be committed, granted or expended solely for the purposes described in the Management Plan. No distribution shall be made from the Fund to any individual or entity if such distribution will in the judgment of Trust jeopardize the Trust's tax exempt status. It is intended by the foregoing that at the time a distribution is made from the Fund, the distribution is being made for the purposes described in the Management Plan.
5. Assignment. If Trust ceases to be a qualified charitable organization or if Trust proposes to dissolve, this Agreement and the Fund may be transferred or

assigned by Trust. Trust may assign or transfer its respective rights and obligations under this Agreement only to an organization that:

- (i) is approved by USFWS;
- (ii) is a public agency or a qualified organization at the time of transfer under section 170(h) of the Internal Revenue Code of 1954, as amended (or any successor provision then applicable), and the applicable regulations promulgated thereunder;
- (iii) is authorized to acquire and hold conservation easements under California Civil Code section 815 et seq. (or any successor provision then applicable); and
- (iv) agrees in writing to fulfill the Management Plan.

6. Administrative Provisions. Notwithstanding anything herein to the contrary, Trust shall hold the Fund, and all contributions to the Fund, subject to the provisions of the applicable California laws, and the Trust's Articles of Incorporation and Bylaws. The Board of the Trust shall monitor the distribution of the Fund, and shall have all powers of modification and removal specified in the United States Treasury Regulations section 1.170A-9(e)(11)(v)(B). Upon request by the Founding Contributor, Trust will provide Founding Contributor with a copy of the annual examination of the finances of the Trust as reported upon by independent certified accountants.
7. Conditions for Acceptance of Funds. Trust shall not be responsible for any management or stewardship activities that are not contained in the Management Plan. However, if in Trust's judgment, additional or other management or stewardship activities will promote the conservation purposes of the Management Plan or Conservation Easement, Trust may, in its sole discretion, expend Funds for those activities.
8. Not a Separate Trust. The Fund may be a component part of Trust. All money and property in the Fund may be held as general assets of Trust and not segregated as trust property of a separate trust. Alternatively, Trust may, in its sole and absolute discretion, segregate the money and property of the Fund, but is not required to do so.
9. Accounting. The receipts and disbursements of this Fund shall be accounted for separately and apart from those of the other conservation endowment funds of the Trust.
10. Investment of Funds. Trust shall have all powers necessary or in its sole discretion desirable to carry out the purposes of the Fund, including, but not limited to, the power to retain, invest and reinvest the Fund and the power to commingle the assets of the Fund with those of other funds for investment purposes.

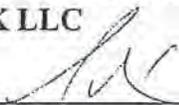
11. Costs of the Fund. It is understood and agreed that the Fund shall pay a fair share portion of the total investment and administrative costs of Trust. Those costs annually charged against the Fund shall be determined in accordance with the then current fee schedules adopted by Trust as applicable to funds of this type.

12. Definitions and Construction.

a. As used in this Agreement:

- i. A "qualified charitable conservation organization" means an organization described in section 501(c)(3) and which is other than a private trust under section 509(a) of the Internal Revenue Code.
- ii. References to any provision of the Internal Revenue Code shall be deemed references to the U.S. Internal Revenue Code of 1986 as the same may be amended from time to time and the corresponding provision of any future U.S. Internal Revenue Code.
- iii. It is intended that the Fund shall be a component part of the Trust and that nothing in this Agreement shall affect the status of Trust as an entity which is a qualified charitable conservation organization. This Agreement shall be interpreted in a manner consistent with the foregoing intention and so as to conform to the requirements of the Internal Revenue Code and any regulations issued pursuant thereto applicable to the intended status of Trust.

IN WITNESS WHEREOF, the Founding Contributor has executed this Agreement and the Trust has caused this Agreement to be approved by its Board of Directors and to be executed by a duly authorized officer, all as of the Effective Date.

AGRICULTURAL TRUST OF CONTRA COSTA COUNTY	THE VINEYARDS AT MARSH CREEK LLC
By: _____	By: <u></u>
Its: _____	Its: <u>President</u>

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AGRICULTURAL TRUST OF CONTRA COSTA COUNTY	THE VINEYARDS AT MARSH CREEK LLC
By: <u>Edward P. Meyer</u>	By: _____
Its: <u>Secretary/Treasurer</u>	Its: _____

**Exhibit D
to
Conservation Easement Deed**

[Wind Turbine Generator Leases]

END OF DOCUMENT