Appendix E
Comments on the Draft Environmental Impact Report and Responses to Comments

The Draft PEIR was circulated for review and comment by the public, other interested parties, and public agencies. The comment letters received and the names of the commenters are listed in Table E-1. Copies of the letters and other written comments are included in this chapter.

State CEQA Guidelines Sections 15088(a) and 15088(b) require that comments raising environmental issues must receive reasoned, good faith, written responses in the Final PEIR. This chapter contains all the comments received on the Draft PEIR and the Lead Agency's responses to these comments. In general, the responses provide explanation or amplification of information contained in the Draft PEIR.

CEQA is primarily focused on the potential significant environmental impacts that may result from a project. Comments that are outside the scope of CEQA review will be provided to the County for consideration as part of the project approval process. These comments are answered with a general response.

The comment letters have been organized into five categories of commenter and numbered as shown in Table E-1. Within each letter, individual comments have been numbered consecutively. For example Comment FA-1-1 is the first comment in the comment letter received from the U.S. Fish and Wildlife Service, which is a Federal Agency.

Revisions made to the Draft PEIR in response to comments are presented in the body of the comment as text to be deleted (~~strikethrough~~) and text to be added (<u>underline</u>). The Final PEIR incorporates these changes, as well as minor, clarifying revisions made by the Lead Agency. A complete underline/strikeout version of the Final PEIR included on disc with printed copies of the Final PEIR or available on request.

Table E-1. Comment Letters Received on the Draft EIR

ID #	Name	Date
Federal Agencies		
FA-1	U.S. Fish and Wildlife Service	July 24, 2014
State Agencies		
SA-1	California Department of Transportation	July 21, 2014
Local Agencies		
LA-1	East Bay Regional Park District	July 21, 2014
LA-2	Alameda County APWRA Scientific Review Committee	July 16, 2014
Nongovernmental Organizations		
NGO-1	Audubon California	July 21, 2014
NGO-2	Save Mount Diablo	July 18, 2014
General Public		
GP-1	Robert Cooper	June 30, 2014
GP-2	Altamont Winds, LLC	July 21, 2014
GP-3	EDF Renewable Energy	July 21, 2014
GP-4	Golden Hills, LLC	July 21, 2014

E.1 Master Responses

The following responses address important issues raised by multiple commenters. Master Responses were prepared to address these topics and provide a consistent response to these comments. Where specific comments raise the topics addressed in these Master Responses, the Master Responses are referenced by number (e.g., Master Response 1).

E.1.1 Master Response 1—Baseline and Determination of Significance

Baseline

The County determined that the appropriate baseline for analysis of environmental impacts of repowering wind energy projects in the APWRA was the actual existing physical conditions at the time of issuance of the Notice of Preparation (NOP) for the EIR (on August 24, 2010), as provided for in the State CEQA Guidelines Section 15125(a). These conditions include operation of existing wind turbines. In view of the following considerations, the County determined that it was reasonable to assume that wind energy generation would continue to occur in the APWRA.

- Wind energy generation is supported by government policies and by the energy market.
- The APWRA is a high-quality source of wind energy.
- Infrastructure supporting wind energy generation is in place in the APWRA.

As described in the Draft PEIR, the proposed program and specific projects entail a change from one type of wind energy generation facility to another type, while maintaining the overall function of wind energy generation.

In each topical section of the PEIR, a description of relevant existing conditions is presented. For example, in the Section 3.1, *Aesthetics*, the existing visual characteristics of the program and project areas are presented in both text and photographs.

The California Environmental Quality Act (CEQA) Guidelines provide that existing conditions at the time an NOP is released or when environmental review begins "normally" constitute the baseline for environmental analysis (State CEQA Guidelines Section 15125). In 2010, the California Supreme Court issued an opinion holding that while lead agencies have some flexibility in determining what constitutes the baseline, relying on "hypothetical allowable conditions"—when those conditions are not a realistic description of the conditions without the project—would be an illusory basis for a finding of no significant impact from the project and, therefore, a violation of CEQA (*Communities for a Better Environment v. South Coast Air Quality Management District* [2010] 48 Cal.4th 310).

The state Supreme Court has recognized that there is a difference between baseline, no project alternative, and cumulative impact analyses. An EIR must include an analysis of the impacts in each of these cases. These three types of analyses can be characterized as follows.

- Baseline: Existing and/or, when justified by knowledge of anticipated changes in environmental conditions (e.g., separately approved or anticipated projects), future conditions. The baseline provides the public and decision makers with an understanding of the current or background character of conditions. The EIR must analyze the changes from baseline conditions that would occur should the project be approved. An EIR should disclose existing conditions even when the future condition is justifiably used as baseline, as a point of information.
- No Project: Future conditions based on a reasonable projection of planned activities. The EIR must analyze the changes from existing conditions that would occur as a result of a future without the project.
- Cumulative Impact: Analysis of the project's contribution to a cumulative significant impact resulting from past, present, and reasonably foreseeable future actions and the determination of whether that contribution is "considerable."

It is important to understand the difference between the No Project alternative and the baseline. As described above, the baseline is defined existing conditions. As described in detail on pages 4-1 and 4-2 of the Draft PEIR, CEQA requires that the No Project alternative be analyzed and that such an analysis include what would be reasonably expected to occur in the foreseeable future if the project were not approved based on current plans and consistent with available infrastructure and community services. Because, as described above, it is reasonable to anticipate that wind energy generation will continue to operate in the APWRA, the No Project alternative analyzed in the Draft PEIR involved a scenario in which existing turbines would continue to operate as they do at the present time, without repowering and with reauthorization of the existing or similar turbines. The No Project alternative is considered *as an alternative* to the proposed project, and is not the baseline to which the impacts of the proposed program were compared to determine the level of significance. The County considers the probability of continued use of the APWRA for wind energy use, even with existing old-generation turbines, to be far more likely in the future than removal and abandonment of all or most of the turbines in the APWRA.

Determination of Significance

Given the characteristics of the APWRA and of the proposed projects and program, determining the baseline and the threshold of significance for avian impacts was particularly important. Specific information on that baseline, including how it was developed and quantified, is found in *Avian Fatality Analysis Methods* on pages 3.4-51 through 3.4-53 of the Draft PEIR. Additional explanation is provided in Master Response 3.

Several commenters requested clarification regarding the determination of significance for impacts on avian species. In response to these comments, the first three paragraphs of *Determination of Significance* on page 3.4-55 of the Draft PEIR (Section 3.4, *Biological Resources*) have been revised as shown below to clarify the significance determination for impacts on avian species.

> The basis for determining when a given impact exceeds the threshold of significance—that is, when it has a substantial adverse effect—was determined by the professional judgment of qualified biologists. Under long-established CEQA practice and principle, such determinations are derived from comparison with the baseline of existing conditions, as the focus of CEQA is on "substantial adverse effect" as a change from existing conditions. The analysis of impacts on biological resources, and in particular on avian species in the program area, accordingly, entailed the comparison of the existing condition of ~~infrequent but~~ regular and more or less predictable levels of avian mortality associated with the existing wind turbines—the baseline mortality rate defined above in *Avian Fatality Analysis Methods*—with the anticipated or calculated projection of the mortality rate that would result from implementation of the program or projects. Where the projected rate would exceed the baseline rate, the impact would typically be significant; if the projected rate is below the baseline rate, the impact would typically be considered less than significant. The County considered several issues involving use of the typical determination of significance outlined above.
>
> - The baseline condition is one that already results in a substantial number of avian fatalities, which in itself constitutes a significant impact. ~~These calculations are informed by two factors:~~
> - ~~(1)~~ Avian mortality ~~is comprised~~ consists of a series of temporal, moment-to-moment events; accordingly, it cannot be ~~that is not~~ viewed as a constant in the way that other baseline environmental conditions ~~exist~~, such as presence of existing habitat areas, ~~air quality~~landscape features, or an earthquake fault, can be viewed~~; and~~ .
> - ~~(2)~~ Estimation of fatality rates from existing and new-generation turbines is, as discussed in ~~more detail below~~the impact analysis, variable and uncertain.
> - ~~—~~
> - ~~Another condition under which a~~A determination of significance would be ~~made would be~~ appropriate if wind turbine operations ~~would~~ could violate specific laws and regulations (e.g., ESA, CESA, MBTA) that are not ~~based on~~tied to mortality rates ~~of mortality~~.
> - ~~The analysis in this PEIR is also informed by the~~ Commitments were agreed to by the majority of the wind operators, documented in the 2007 Settlement Agreement, ~~by the majority of the wind operators~~ to achieve a 50% reduction in avian fatalities ~~from an estimated baseline~~ of annual fatalities of four focal species (golden eagle, burrowing owl, American kestrel, and red-tailed hawk) through ~~the~~ implementation of the Avian Wildlife Protection Program and Schedule (AWPPS) as established in 2005 and modified in 2007.
>
> Accordingly, in view of the foregoing considerations, the fact that even reduced avian fatalities could violate specific laws and regulations, and the conservation approach described in the 2007 Settlement Agreement, the County has determined that the threshold of significance for impacts on avian species is effectively any level of avian mortality above zero.

The County believes that this clarification regarding the determination of significance for avian impacts is consistent with the approach and mitigation actually used and already required in the

Draft PEIR—for example, the required mitigation for all raptor fatalities regardless of whether the impact exceeds baseline levels.

E.1.2 Master Response 2—Program Area Boundary

Comments were received from several commenters regarding the selection of the program area boundary. As discussed in detail in Section 2.1, *Program Location and Program Area*, on page 2-1 of the Draft PEIR, the program area boundary is a revised boundary that was developed using the 70-meter wind speed data produced by CEC, larger than the APWRA boundary previously identified in the Alameda County General Plan. This revised boundary was developed during early preparation of the NCCP/HCP, which is discussed in greater detail in *History since 2001* on pages 1-5 through 1-8 of the Draft PEIR. Within the APWRA boundary identified in the General Plan, as in other similarly rural areas, the County designated and zoned the area for large parcels (160- and 320-acre minimum) to support agricultural and wind energy uses. The area was not specifically zoned for wind energy uses.

The program area boundary presented in the PEIR is the same as that described in the NOP for the PEIR, and thus has been subject to public review during the scoping period for the EIR.

Comments were received that approval of new turbines in the expanded program area should be subject to CEQA assessment and public review. At a program level, the PEIR provides that environmental and public review by evaluating the County's approval of wind energy projects within the program area. As described in detail in Section 1.1.2, *Program-Level Analysis and Tiering*, of the Draft PEIR, specific projects proposed in the future would undergo project-level environmental analysis tiered from the PEIR. The two individual projects evaluated at the project level in the PEIR are within the APWRA boundary as established in the Alameda County General Plan.

E.1.3 Master Response 3—Avian Mortality Rates Methodology for Existing Conditions

Several commenters noted that in the Draft PEIR, the baseline fatality rates used were the average over the course of the study on which the analysis was based (2005–2011 bird years) as opposed to the average over the last 3 years. The argument presented for using the last 3 years is that these fatality rates may be more representative because all management actions (i.e., removal of hazardous turbines and 3.5-month universal seasonal shutdown) to reduce avian fatalities were in effect during those years. However, annual variation (changes from one year to the next) is by far the largest component of variation in fatality rates. In fact, the evidence in support of the effectiveness of the various management actions is not conclusive, precisely because of the range of variation in fatality rates from year to year. The County therefore chose to include all years in the average to best account for this largest component of variation. The County believes that a sample size of 7 years—the largest sample of continuous monitoring data available—is more than sufficient to characterize the fatality rates for old-generation turbines. The decrease in fatality rates that would result from calculating rates using the last 3 years of data versus all 7 years of available data ranges from -9% for golden eagle to -27% for burrowing owl. Several commenters also indicated that because another year of data has become available since the publication of the Draft PEIR (i.e., the 2012 bird year), this additional year of data should be included in the baseline fatality rates in the Final PEIR. The County reviewed this information; however, as mentioned above, the County

believes that a sample size of 7 years, as used in the Draft PEIR, is more than sufficient to characterize the fatality rates for old-generation turbines.

As discussed in Master Response 1, *Baseline and Determination of Significance*, although the average fatality rates at old-generation turbines constituted the baseline for assessment of impacts in the PEIR, the final conclusion of the PEIR is that the impact of turbine-related avian fatalities is significant and unavoidable; consequently, the PEIR requires mitigation for each raptor killed. For this reason, changing the fatality rates calculated for the baseline condition would not change the conclusions or the mitigation presented in the PEIR. It would, however, change the threshold at which adaptive management measures, including curtailment of turbine operations, would be implemented, since the baseline rate was used as the threshold for requiring implementation of adaptive management measures.

E.1.4 Master Response 4—Estimated Avian Mortality Rates Methodology

Several commenters noted that additional data from the second year of postconstruction fatality monitoring at the Vasco Winds Project is now available and recommended including this information in the Final PEIR. Since the preparation of the Draft PEIR, some additional information regarding golden eagle fatalities at the Vasco Wind Project has become available and is therefore being incorporated into the Final PEIR. At the time the Draft PEIR was prepared, the first year of postconstruction fatality monitoring at the Vasco Winds Project had been completed and a report had been prepared. Since the Draft PEIR was prepared, the second year of postconstruction fatality monitoring was completed. Although a report is not yet available, as part of its comments on the Draft PEIR, NextEra Energy Resources, the operator of the Vasco Winds Project, provided information on golden eagle fatalities found during the second year of monitoring at the project. Additional updated information on other avian species was not provided and is not available; accordingly, no revisions have been made to the Vasco Winds Fatality rates for all other avian species as presented in the Draft PEIR. Table 3.4-10 on page 3.4-53 of the Draft PEIR has been revised as shown below to include new information on golden eagle.

Table 3.4-10. Annual Adjusted Fatality Rates for Nonrepowered and Repowered APWRA Turbines

		Repowered		
Species/Group	Nonrepowered[a]	Diablo Winds[b]	Buena Vista[c]	Vasco Winds[d]
American kestrel	0.59	0.09	0.15	0.30
Barn owl	0.24	0.02	0.00	0.03
Burrowing owl	0.78	0.84	–	0.05
Golden eagle	0.08	0.01	0.04	~~0.02~~0.03[e]
Loggerhead shrike	0.19	0.00	–	–
Prairie falcon	0.02	–	0.00	–
Red-tailed hawk	0.44	0.20	0.10	0.25
Swainson's hawk	0.00	–	–	–
All raptors	2.43	1.21	0.31	0.64
All native non-raptors	4.50	2.51	1.01	2.09

Notes: fatality rates reflect annual fatalities per MW. "–" denotes that no fatalities were detected. "0.00" signifies that, although fatalities were detected, the rate is lower than two significant digits.

[a] Average of 2005–2011 bird years.

[b] Average of 2005–2009 bird years.

[c] Average of 3 years (2007–2009).

[d] Values from first year of monitoring (2013).

[e] Value updated based on information provided by NextEra Energy Resources on July 21, 2014. Value provided is an average of the adjusted rates from monitoring years 1 (0.016) and 2 (0.048).

Table 3.4-11 on page 3.4-99 of the Draft PEIR has been revised as shown below to reflect this new information.

Table 3.4-11. Estimated Annual Avian Fatalities for Existing and Repowered Program Area—Alternative 1 (417 MW)

	Estimated Annual Fatalities for Program Area						
	Nonrepowered	Repowered					
		Diablo Winds[a]		Buena Vista[b]		Vasco Winds[c,d]	
Species	Average Annual Fatalities	Average Annual Fatalities	% Decrease	Average Annual Fatalities	% Decrease	Average Annual Fatalities	% Decrease
American kestrel	194.2	37.5	81%	62.6	75%	123.8	36%
Barn owl	79.5	8.3	90%	0.0	100%	13.8	83%
Burrowing owl	255.1	350.3	-37%	0.0	100%	20.9	92%
Golden eagle	26.6	4.2	84%	16.7	44%	~~6.7~~13.3	~~75~~50%
Loggerhead shrike	61.8	0.0	100%	0.0	100%	0.0	100%
Prairie falcon	6.6	0.0	100%	0.0	100%	0.0	100%
Red-tailed hawk	144.5	83.4	42%	41.7	71%	102.6	29%
Swainson's hawk	0.5	0.0	100%	0.0	100%	0.0	100%
All raptors	799.9	504.6	37%	129.3	84%	267.7	67%
All native non-raptors	1,482.0	1,046.7	29%	421.2	81%	873.2	41%

Note: fatality rates reflect annual fatalities (95% confidence interval).

[a] Diablo Winds fatality rates extrapolated to the overall program area.

[b] Buena Vista fatality rates extrapolated to the overall program area.

[c] Vasco Winds fatality rates extrapolated to the overall program area.

[d] Vasco Winds fatality rate for golden eagle based on updated information received from NextEra Energy Resources on July 21, 2014, and extrapolated to the overall program area.

Table 3.4-12 on page 3.4-113 of the Draft PEIR has been revised as shown below to reflect this new information.

Table 3.4-12. Estimated Annual Avian Fatalities for Existing and Repowered Program Area—Alternative 2 (450 MW)

	Estimated Annual Fatalities for Program Area						
	Nonrepowered	Repowered					
		Diablo Winds[a]		Buena Vista[b]		Vasco Winds[c,d]	
Species	Average Annual Fatalities	Average Annual Fatalities	% Decrease	Average Annual Fatalities	% Decrease	Average Annual Fatalities	% Decrease
American kestrel	194.2	40.5	79	67.5	65	133.7	31
Barn owl	79.5	9.0	89	0.0	0	14.9	81
Burrowing owl	255.1	378.0	-48	0.0	100	22.5	91
Golden eagle	26.6	4.5	83	18.0	32	~~7.2~~14.4	~~73~~46
Loggerhead shrike	61.8	0.0	100	0.0	100	0.0	100
Prairie falcon	6.6	0.0	100	0.0	100	0.0	100
Red-tailed hawk	144.5	90.0	38	45.0	69	110.7	23
Swainson's hawk	0.5	0.0	100	0.0	100	0.0	100
All raptors	799.9	544.5	32	139.5	83	288.9	64
All native non-raptors	1,482.0	1,129.5	24	454.5	69	942.3	36

Note: fatality rates reflect annual fatalities (95% confidence interval).

[a] Diablo Winds fatality rates extrapolated to the overall program area.

[b] Buena Vista fatality rates extrapolated to the overall program area.

[c] Vasco Winds fatality rates extrapolated to the overall program area.

[d] Vasco Winds fatality rate for golden eagle based on updated information received from NextEra Energy Resources on July 21, 2014, and extrapolated to the overall program area.

Table 3.4-13 on page 3.4-116 of the Draft PEIR has been revised as shown below to reflect this new information.

Table 3.4-13. Estimated Annual Avian Fatalities for Existing and Repowered Golden Hills Project Area

	Estimated Annual Fatalities for Program Area						
	Nonrepowered	Repowered					
		Diablo Winds[a]		Buena Vista[b]		Vasco Winds[c,d]	
Species	Average Annual Fatalities	Average Annual Fatalities	% Decrease	Average Annual Fatalities	% Decrease	Average Annual Fatalities	% Decrease
American kestrel	47.5	8.0	83	13.3	72	26.3	45
Barn owl	19.4	1.8	91	–	–	2.9	85
Burrowing owl	62.4	74.3	-19	0.0	100	4.4	93
Golden eagle	6.5	0.9	86	3.5	46	~~1.4~~2.8	~~78~~57
Loggerhead shrike	15.1	0.0	100	0.0	100	0.0	100
Prairie falcon	1.6	0.0	100	0.0	100	0.0	100
Red-tailed hawk	35.4	17.7	50	8.8	75	21.7	39
Swainson's hawk	0.1	0.0	100	0.0	100	0.0	100
All raptors	195.7	107.0	45	27.4	86	56.8	71
All native non-raptors	362.6	221.9	39	89.3	75	185.1	49

Note: fatality rates reflect annual fatalities (95% confidence interval).

[a] Diablo Winds fatality rates extrapolated to the Golden Hills project area.

[b] Buena Vista fatality rates extrapolated to the Golden Hills project area.

[c] Vasco Winds fatality rates extrapolated to the Golden Hills project area.

[d] Vasco Winds fatality rate for golden eagle based on updated information received from NextEra Energy Resources on July 21, 2014, and extrapolated to the Golden Hills project area.

Table 3.4-14 on page 3.4-120 of the Draft PEIR has been revised as shown below to reflect this new information.

Table 3.4-14. Estimated Annual Avian Fatalities for Existing and Repowered Patterson Pass Project Area

	Estimated Annual Fatalities for Program Area						
	Nonrepowered	Repowered					
		Diablo Winds[a]		Buena Vista[b]		Vasco Winds[c,d]	
Species	Average Annual Fatalities	Average Annual Fatalities	% Decrease	Average Annual Fatalities	% Decrease	Average Annual Fatalities	% Decrease
American kestrel	12.9	1.8	86	3.0	77	5.9	54
Barn owl	5.2	0.4	92	–	–	0.7	87
Burrowing owl	16.9	16.6	2	0.0	100	1.0	94
Golden eagle	1.8	0.2	89	0.8	56	~~0.3~~0.6	~~82~~67
Loggerhead shrike	4.1	0.0	100	0.0	100	0.0	100
Prairie falcon	0.4	0.0	100	0.0	100	0.0	100
Red-tailed hawk	9.6	4.0	59	2.0	79	4.9	49
Swainson's hawk	0.0	0.0	0.0	0.0	0	0.0	0
All raptors	53.1	24.0	55	6.1	88	12.7	76
All native non-raptors	98.4	49.7	49	20.0	80	41.5	58

Note: fatality rates reflect annual fatalities (95% confidence interval).

[a] Diablo Winds fatality rates extrapolated to the Patterson Pass project area.

[b] Buena Vista fatality rates extrapolated to the Patterson Pass project area.

[c] Vasco Winds fatality rates extrapolated to the Patterson Pass project area.

[d] Vasco Winds fatality rate for golden eagle based on updated information received from NextEra Energy Resources on July 21, 2014 and extrapolated to the Patterson Pass project area.

The County notes that although additional information on avian species, other than golden eagle, is not yet available, the fatality rates used in the Draft PEIR represent the best available information on fatality rates at the Vasco Wind Project. Furthermore, while compensatory mitigation under Mitigation Measure BIO-11h is based on the Vasco Wind Project fatality rates, Mitigation Measure BIO-11g also requires applicants to conduct fatality monitoring at each project to determine project-specific fatality rates. Thus, while the first compensatory mitigation installment required for each project is based on the Vasco Wind Project fatality rates, each project will conduct postconstruction fatality monitoring, and subsequent compensatory mitigation will be based on project-specific rates, as described on page 3.4-108 of the Draft PEIR. The County selected this mitigation framework because individual projects would not have the results of project-specific postconstruction monitoring for at least 3 years following construction of the projects. The County therefore believes that the mitigation measure and the framework outlined will ensure that the compensatory mitigation is ultimately based on the estimated fatalities occurring at each specific project as identified through project-specific monitoring.

Several other comments were received regarding the use of other repowered projects as a method to estimate potential impacts at future repowered projects. Specifically, commenters stated that the Diablo Winds Project and the Buena Vista Wind Project were older technologies and/or used flawed methods to estimate fatalities, and therefore may underestimate the risk to birds and bats. The County concurs that there are potential biases with using these two projects to estimate the effects of future repowering projects, and acknowledged these biases in the Draft PEIR on pages 3.4-53 through 3.4-54 of the Draft PEIR. However, the County has determined that there is no other

information available to help predict potential effects of future repowering projects; accordingly, the information presented in the Draft PEIR and used for the analysis is the best and only relevant information available at the time the Draft PEIR was prepared. Moreover, while the biases affect the prediction of potential effects from repowering, mitigation is not solely based on these predictions, as noted above. Each repowered project would be required to conduct postconstruction fatality monitoring to determine the impacts of each project, and mitigation would ultimately be based on the number of estimated fatalities for each project, ensuring that the required mitigation is commensurate with the estimated impacts.

E.1.5 Master Response 5—Avian Fatality Monitoring Methodology

Several commenters stated that the Draft PEIR did not describe in enough detail the requirements for avian fatality monitoring after construction of repowered projects. The Draft PEIR was intended to be flexible on this point, as the field of avian fatality monitoring at windfarms is rapidly evolving. However, Mitigation Measures BIO-11a on page 3.4-103 and BIO-11g on pages 3.4-106 and 3.4-107 have been revised as shown below to provide more clarity and detail on the requirements of postconstruction monitoring programs. Note also that changes referenced in Master Response 6 regarding the makeup of the TAC are included in these revisions.

Mitigation Measure BIO-11a: Prepare a project-specific avian protection plan

All project proponents will prepare a project-specific APP to specify measures and protocols consistent with the program-level mitigation measures that address avian mortality. The project-specific APPs will include, at a minimum, the following components.

- Information and methods used to site turbines to minimize risk.
- Documentation that appropriate turbine designs are being used.
- Documentation that avian-safe practices are being implemented on project infrastructure.
- Methods used to discourage prey for raptors.
- A detailed description of the postconstruction avian fatality monitoring methods to be used (consistent with the minimum requirements outlined in Mitigation Measure BIO-11g).
- Methods used to compensate for the loss of raptors (consistent with the requirements of Mitigation Measure BIO-11h).

Each project applicant will prepare and submit a draft project-specific APP to the County. The draft APP will be reviewed by the TAC for consistency and the inclusion of appropriate mitigation measures that are consistent with the PEIR and recommended for approval by the County. Each project applicant must have an approved Final APP prior to commercial operation.

Mitigation Measure BIO-11g: Implement postconstruction avian fatality monitoring for all repowering projects

A postconstruction monitoring program will be conducted at each repowering project for a minimum of 3 years beginning ~~with~~ on the ~~in 3 months of the~~ commercial operation date (COD) of the project. Monitoring may continue beyond 3 years if construction is completed in phases. Moreover, if the results of the first 3 years indicate that baseline fatality rates (i.e., nonrepowered fatality rates) are exceeded, monitoring will be extended until the average annual fatality rate has dropped below baseline fatality rates for 2 years, and to assess the effectiveness of adaptive management measures specified in Mitigation Measure BIO-11i. An additional 2 years of monitoring will be implemented at year 10 (i.e., the tenth anniversary of the COD). Project proponents will provide access to qualified third parties authorized by the County to conduct any additional monitoring after the initial 3-year

monitoring period has expired and before and after the additional 2-year monitoring period, provided that such additional monitoring utilizes scientifically valid monitoring protocols.

A technical advisory committee (TAC) will be formed to oversee the monitoring program and to ~~consult~~ advise the County on adaptive management measures that may be necessary if fatality rates substantially exceed those predicted for the project (as described below in Mitigation Measure BIO-11i). The TAC will have a standing meeting, which will be open to the public, every 6 months to review monitoring reports produced by operators in the program area. In these meetings, the TAC will discuss any issues raised by the monitoring reports and ~~determine~~ recommend to the County next steps to address issues, including scheduling additional meetings, if necessary.

The TAC will comprise representatives from the County (including one or more ~~a~~ technical consultants, ~~contracted by the County, at its discretion~~ such as a biostatistician, an avian biologist, and a bat biologist), and wildlife agencies (CDFW, USFWS)~~, and~~. ~~a representative of the operators of repowered wind projects in Alameda County.~~ Additional TAC members may also be considered (e.g., a representative from Audubon, a landowner in the program area, a representative of the operators) at the discretion of the County. The TAC will be a voluntary and advisory group that will ~~support~~provide guidance to the County Planning Department ~~decisions made by. the County. As such, the TAC is not a decision-making body and will not be bound to the public noticing requirements of the Brown Act. However, t~~To maintain transparency with the public, all TAC meetings will be open to the public, and notice of meetings will be given to interested parties.

The TAC will have three primary advisory roles: (1) to review and advise on project planning documents (i.e., project-specific APPs) to ensure that project-specific mitigation measures and compensatory mitigation measures described in this PEIR are appropriately and consistently applied, (2) to review and advise on monitoring documents (protocols and reporting) for consistency with the mitigation measures, and (3) to review and ~~monitor~~ advise on implementation of the adaptive management plans.

Should fatality monitoring reveal that impacts exceed the baseline thresholds established in this PEIR, the TAC will advise the County on requiring implementation of adaptive management measures as described in Mitigation Measure BIO-11i. The County will have the ~~ultimate~~ decision-making authority, as it is the organization issuing the CUPs. However, the TAC will collaboratively inform the decisions of the County.

Operators are required to provide for avian use surveys to be conducted within the project area boundaries for a minimum of 30 minutes duration. Surveyors will be qualified and trained and subject to approval by the County.

Carcass surveys will be conducted at every turbine for projects with 20 or fewer turbines. For projects with more than 20 turbines, such surveys will be required at a minimum of 20 turbines, and a sample of the remaining turbines may be selected for carcass searches. The operator will be required to demonstrate that the sampling scheme and sample size are statistically rigorous and defensible. Where substantial variation in terrain, land cover type, management, or other factors may contribute to significant variation in fatality rates, the sampling scheme will be stratified to account for such variation. The survey protocol for sets and subsets of turbines, as well as proposed sampling schemes that do not entail a search of all turbines, must be approved by the County in consultation with the TAC prior to the start of surveys.

The search interval will not exceed 14 days for the minimum of 20 turbines to be surveyed; however, the search interval for the additional turbines (i.e., those exceeding the 20-turbine minimum) that are to be included in the sampling scheme may be extended up to 28 days or longer if recommended by the TAC.

The estimation of detection probability is a rapidly advancing field. Carcass placement trials, broadly defined, will be conducted to estimate detection probability during each year of monitoring. Sample sizes will be large enough to potentially detect significant variation by season, carcass size, and habitat type.

Operators will be required to submit copies of all raw data forms to the County annually, will supply raw data in a readily accessible digital format to be specified by the County, and will prepare raw data for inclusion as appendices in the annual reports. The intent is to allow the County to conduct independent analyses and meta-analyses of data across the APWRA, and to supply these data to the regulatory agencies if requested.

Annual reports submitted to the County will provide a synthesis of all information collected to date. Each report will provide an introduction; descriptions of the study area, methods, and results; a discussion of the results; and any suitable recommendations. Reports will provide raw counts of fatalities, adjusted fatality rates, and estimates of project-wide fatalities on both a per MW and per turbine basis.

E.1.6 Master Response 6—Technical Advisory Committee

Several comments were received regarding the responsibilities of the TAC, including a request for information regarding the future role of the APWRA Scientific Review Committee (SRC) and how the role of the new TAC will compare to that of the SRC. Several commenters had specific recommendations for the make-up of the TAC, including the types of individuals that should be included, such as qualified scientists and biostatisticians. The County Board of Supervisors originally established the requirement for the formation of the SRC in 2005, prior to the 2007 Settlement Agreement, to address impacts associated with avian mortality in the APWRA and to have the primary stakeholder groups represented on the Committee. At that time, the existing CUPs were set to expire in 13 years (in 2018). Consequently, the SRC has no defined role or oversight when the existing permits expire. The SRC has been instrumental in providing the guidance to achieve avian mortality reduction goals and has provided the foundation to ensure that avian monitoring and analysis are implemented in an open and transparent manner and using the best available science and information. While the structure of the SRC has been beneficial, the cost of maintaining such a committee is significant for the County and the operators and, unlike the conditions of the existing permits, established mitigation measures in the PEIR will provide guidance for the review body. Accordingly, the County, like other nearby counties (i.e., Contra Costa and Solano) has decided to establish a new review body, the APWRA Technical Advisory Committee (TAC). The TAC was described in Mitigation Measure BIO-11g beginning on page 3.4-106 of the Draft PEIR. The County intends that the overall duties of the TAC will be similar to those of the SRC in that the group will review documents and plans to ensure consistency among projects, ensure that the best available science is used, and serve an advisory role to the Planning Department.

In response to comments received on the PEIR, Mitigation Measure BIO-11g on pages 3.4-106 and 3.4-107 of the Draft PEIR has been revised to provide clarification regarding the TAC. The revised language is presented above in Master Response 5.

The County believes that the framework described in the Draft PEIR is consistent with the overall goals and objectives described by the commenters, including a TAC that is open to public review, that uses the best available science to inform management recommendations to achieve avian and bat management and conservation, and that includes the appropriate individuals with the knowledge and expertise necessary to make informed recommendations to the County. The County would ultimately condition each project with specific roles, responsibilities, funding requirements, and expectations regarding the TAC, consistent with Mitigation Measure BIO-11g. If approved, construction of the Golden Hills and Patterson Pass projects could take place in 2015; accordingly, the County envisions establishment of the TAC immediately following approval of these projects.

E.1.7 Master Response 7—Migratory Bird Treaty Act

Several commenters suggested that the Draft PEIR should include an assessment of the impacts on all birds. In reality, the set of birds for which data are available is limited. Some species were recorded as fatalities at some locations in the APWRA, but not at others. Additionally, in general, species that were not addressed in detail are either common or exhibit relatively low fatality rates. Consequently, the County determined to use an analysis of focal species, species of local conservation concern (i.e., species addressed in the Draft Program APP), and all native non-raptors as a group, rather than presenting information on each individual species. The County believes that focusing the analysis in this manner, with a consideration of the biases in the data discussed on pages 3.4-53 and 3.4-54 of the Draft PEIR, is appropriate to address impacts on avian species.

As discussed in Master Response 1, the final conclusion of the Draft PEIR is that the impact of turbine-related avian fatalities (for all species) is significant and unavoidable. The PEIR requires compensatory mitigation for each raptor killed, and this mitigation will benefit all avian species, regardless of whether they are addressed individually in the PEIR.

E.1.8 Master Response 8—Avian Protection Plan

Several commenters noted that the Draft PEIR states that the key provisions of a program-level Avian Protection Plan (APP), developed by the County, have been incorporated into the PEIR as mitigation measures, and requested that the County provide copies of the program-level APP to enable comparison with the PEIR. As noted in *History since 2001* on page 1-8 of the Draft PEIR, the County began development of a program-level APP, intended to provide a framework for operation of turbines that would be incorporated into project-specific APPs developed by project applicants for each individual project prior to commencing repowering. The County worked with wildlife agencies and other stakeholders to prepare a draft program-level APP; however, as of preparation of the Draft PEIR, the program-level APP had not been finalized. Additionally, because no separate mechanism to implement the program-level APP was developed, the County determined that the best method to ensure implementation of the measures in the program-level APP would be to incorporate them as mitigation measures in the Draft PEIR. Consequently, the measures in the draft program-level APP were incorporated into the Draft PEIR, with modifications to respond to public comments on the NOP, and as determined necessary by the County to ensure that they were feasible. Additionally, the County believes that incorporating the measures in the draft APP into the Draft PEIR allows for a more complete and in-depth review by the public and other stakeholders. Consequently, the program-level APP document is no longer relevant or applicable and accordingly was not included with the Draft PEIR. The PEIR effectively serves as the programmatic APP with review and comments incorporated as part of the CEQA public comment process. Nevertheless, in response to these comments, the draft program-level APP document has been attached in Appendix F, *Historical Documentation*, of the Final PEIR.

Several commenters also stated that the contents and requirements of the project-specific APPs are unclear. Mitigation Measure BIO 3.4-104 on page 3.4-104 of the Draft PEIR requires preparation of project-specific APPs. The text of Mitigation Measure BIO-11a on page 3.4-104 has been modified as shown in Master Response 5, *Avian Fatality Monitoring Methodology*, to provide clarification of the goals, content, and requirements of the project-specific avian protection plans, as well as the review of the TAC and the County.

The County believes that these modifications address the concerns regarding the contents and requirements of the project-specific APPs.

E.1.9 Master Response 9—Avian Compensatory Mitigation

Numerous commenters provided suggestions regarding Mitigation Measure BIO-11h, including several suggestions regarding the option to contribute to raptor recovery efforts through contributions to rehabilitation facilities, how specific mitigation options would be selected, and clarifications regarding the suggested duration of the compensatory mitigation increments (i.e., 10 years), as well as other conservation measures that may be feasible now or in the future. After careful reevaluation, the County has determined that the option to contribute to raptor recovery efforts, while an important effort, is not an appropriate conservation measure in this instance because it would not benefit any species other than those raptors under the care of such facilities, and consequently it is inconsistent with the overall avian conservation approach outlined in Mitigation Measure BIO-11h. Accordingly, that option has been removed from Mitigation Measure BIO-11h; however, the per-raptor dollar value has been retained as a metric for determining the amount of contribution to conservation efforts as described in the subsequent option. In addition, the County has revised the last bullet of the mitigation measure to include additional options suggested by commenters. Regarding the process for determining which option(s) are selected, the revised measure below requires project applicants to submit a project-specific avian mitigation plan to the TAC and the County as part of their project-specific Avian Protection Plans (required under Mitigation Measure BIO-11a to be approved prior to the start of commercial operations). The County and the TAC will review and consider whether a specific option, or combination of options, as proposed, are appropriate to mitigate the effects as described in Mitigation Measure BIO-11h.

Mitigation Measure BIO-11h, on pages 3.4-109 and 3.4-110 of the Draft PEIR, has been revised as shown below.

Mitigation Measure BIO-11h: Compensate for the loss of raptors and other avian species, including golden eagles, by contributing to conservation efforts

Discussion

Several options to compensate for impacts on raptors are currently available. Some are targeted to benefit certain species, but they may also have benefits for other raptor and non-raptor species. For example, USFWS's ECP Guidelines currently outline a compensatory mitigation strategy for golden eagles using the retrofit of high-risk power poles (poles known or suspected to electrocute and kill eagles). The goal of this strategy is to eliminate hazards for golden eagles. However, because the poles are also dangerous for other large raptors (e.g., red-tailed hawk, Swainson's hawk), retrofitting them can benefit such species as well as eagles.

Similarly, although the retrofitting of electrical poles may have benefits for large raptors, such an approach may provide minimal benefits for smaller raptors such as American kestrel and burrowing owl. Consequently, additional measures would be required components of an overall mitigation package to compensate for impacts on raptors in general.

The Secretary of the Interior issued Order 3330 on October 31, 2013, outlining a new approach to mitigation policies and practices of the Department of the Interior. This approach recognizes that certain strategies aimed at some species (e.g., raptors) can provide substantial benefit to others (e.g., non-raptors) and to the ecological landscape as a whole. The landscape-scale approach to mitigation and conservation efforts is now central to the Department's mitigation strategy. Although the Order was intended for use by federal agencies and as such is not directly applicable to the County, it is

evident that such an approach would likely have the greatest mitigation benefits, especially when considering ongoing and long-term impacts from wind energy projects.

With these considerations in mind, the County has outlined several options that are currently available to compensate for impacts on raptors and other avian species. The options discussed below are currently considered acceptable approaches to compensation for impacts on raptors and other species. Although not every option is appropriate for all species, it is hoped that as time proceeds, a more comprehensive landscape-level approach to mitigation will be adopted to benefit a broader suite of species than might benefit from more species-specific measures. The County recognizes that the science of raptor conservation and the understanding of wind-wildlife impacts are continuing to evolve and that the suite of available compensation options may consequently change over the life of the proposed projects.

Conservation Measures

To promote the conservation of raptors and other avian species, project proponents will compensate for raptor fatalities estimated within their project areas. Mitigation will be provided in 10-year increments, with the first increment based on the estimates (raptors/MW/year) provided in this PEIR for the Vasco Winds Project (Table 3.4-10) or the project-specific EIR for future projects. The Vasco Winds fatality rates were selected because the Vasco turbines are the most similar to those likely to be proposed for future repowering projects and consequently represent the best available fatality estimates. Each project proponent will conduct postconstruction fatality monitoring for at least 3 years beginning at project startup (date of commercial operation) and again for 2 years at year 10, as ~~mandated~~ required under Mitigation Measure BIO-11g, to estimate the average number of raptors taken each year by each individual project. The project proponent will compensate for this number of raptors in subsequent 10-year increments for the life of the project (i.e., three 10-year increments) as outlined below. Mitigation Measure BIO-11g also requires additional fatality monitoring at year 10 of the project. The results of the first 3 years of monitoring and/or the monitoring at year 10 may lead to revisions of the estimated average number of raptors taken, and mitigation provided ~~can~~ may be adjusted accordingly on a one-time basis within each of the first two 10-year increments, based on the results of the monitoring required by Mitigation Measure BIO-11g, in consultation with the TAC. ~~in future 10-year increments.~~

Prior to the start of operations, project proponents will submit for County approval an ~~Raptor~~ avian ~~mitigation plan~~conservation strategy, as part of the project-specific APP outlined in Mitigation Measure BIO-11a, outlining the estimated number of raptor fatalities based on the number and type of turbines being constructed, and the type or types of compensation options to be implemented. Project proponents will use the ~~Raptor~~avian ~~mitigation p~~Plan conservation strategy to craft an appropriate strategy using a balanced mix of the options presented below, as well as considering new options suggested by the growing body of knowledge during the course of the project lifespan, as supported by a Resource Equivalency Analysis (REA) (see example in Appendix C) or similar type of compensation assessment acceptable to the County that demonstrates the efficacy of proposed mitigation for impacts on raptors.

The County Planning Director, in consultation with the TAC, will consider, based on the REA, whether the proposed avian~~Raptor mitigation plan~~conservation strategy is adequate, including consideration of whether each ~~Raptor~~ avian mitigation plan incorporates a landscape-scale approach such that the conservation efforts achieve the greatest possible benefits. Compensation measures as detailed in an approved ~~Raptor~~avian ~~mitigation plan~~ conservation strategy must be implemented within 1 year of the ~~start~~ date of commercialoperations. ~~Raptor~~ Avian ~~mitigation plans~~conservation strategies ~~may be revised and~~ will be reviewed and may be revised by the County ~~,~~ every 10 years, and on a one-time basis in each of the two 10-year increments based on the monitoring required by Mitigation Measure BIO-11g.

- **Retrofitting high-risk electrical infrastructure.** USFWS's ECP Guidelines outline a compensatory mitigation strategy using the retrofit of high-risk power poles (poles known or suspected to electrocute and kill eagles). USFWS has developed an REA (U.S. Fish and Wildlife

Service 2013) as a tool to estimate the compensatory mitigation (number of retrofits) required for the take of eagles. The REA takes into account the current understanding of eagle life history factors, the effectiveness of retrofitting poles, the expected annual take, and the timing of implementation of the pole retrofits. The project proponents may need to contract with a utility or a third-party mitigation account (such as the National Fish and Wildlife Foundation) to retrofit the number of poles needed as demonstrated by a project-specific REA. If contracting directly, the project proponent will consult with utility companies to ensure that high-risk poles have been identified for retrofitting. Proponents will agree in writing to pay the utility owner/operator to retrofit the required number of power poles and maintain the retrofits for 10 years and will provide the County with documentation of the retrofit agreement. The first retrofits will be based on the estimated number of eagle fatalities as described above in this measure or as developed in the project-specific EIR for future projects. Subsequent numbers of retrofits required for additional 10-year durations will be based on the results of project-specific fatality monitoring as outlined in Mitigation Measure BIO-11g. If fewer eagle fatalities are identified through the monitoring, the number of future required retrofits may be reduced through a project-specific REA. Although retrofitting poles has not been identified as appropriate mitigation for other large raptors, they would likely benefit from such efforts, as they (particularly red-tailed and Swainson's hawks) constitute the largest non-eagle group to suffer electrocution on power lines (Avian Power Line Interaction Committee 2006).

- **Measures outlined in an approved Eagle Conservation Plan and Bird and Bat Conservation Strategy.** Project proponents may elect to apply for programmatic eagle take permits from USFWS. The programmatic eagle take permit process currently involves preparation of an ECP and a Bird and Bat Conservation Strategy (BBCS). The ECP specifies avoidance and minimization measures, advanced conservation practices, and compensatory mitigation for eagles—conditions that meet USFWS's criteria for issuance of a permit. The BBCS outlines measures being implemented by the applicant to avoid and minimize impacts on migratory birds, including raptors. If programmatic eagle take permits are obtained by project proponents, those permit terms, including the measures outlined in the approved ECP and BBCS, may constitute an appropriate conservation measure for estimated take of golden eagles and other raptors, provided such terms are deemed by the County to be comparable to or more protective of raptors than the other options listed herein.

- ~~**Contribute to raptor recovery efforts.** Project proponents may elect to contribute funds to raptor recovery centers such as the California Raptor Center (Center). The Center is affiliated with the UC Davis School of Veterinary Medicine, and its programs focus on raptor education, raptor health care and rehabilitation, and raptor research. The average cost to rehabilitate one raptor is approximately $580 (Stedman pers. comm.). The Center receives more than 200 injured or ill raptors annually. Approximately 60–65% are rehabilitated and returned to the wild. In a typical year, the four raptor species most commonly brought in for care are barn owl (96 admissions in 2006), American kestrel (20 admissions), red-tailed hawk (19 admissions), and Swainson's hawk (15 admissions) (California Raptor Center 2011). The Center relies on donations of time and resources to provide resident raptor care and feeding, underwrite education programs, provide rehabilitation medical supplies and medication, and maintain its facilities. The first contributions for any given project will be based on the estimated number of raptor fatalities as described above in this measure or as developed in the project-specific EIR for future projects. Subsequent funds required for additional 10-year installments will be provided on the basis of the average annual raptor fatality rates determined through postconstruction monitoring efforts. Ten-year installments are more advantageous than more frequent installments for planning and budgeting purposes. The donation receipt will be provided to the County as evidence of payment. If fewer raptor fatalities are determined through the monitoring effort, the second installment amount may be reduced to account for the difference between the first estimated numbers and the monitoring results.~~

- **Contribute to raptor conservation efforts.** Project proponents will contribute funds, ~~equivalent to raptor recovery efforts above (i.e.,~~in the amount of $580/raptor fatality~~)~~, in 10-

year increments to ~~other~~ local and/or regional conservation efforts designed to protect, recover, and manage lands for raptors, or to conduct research involving methods to reduce raptor fatalities or increase raptor productivity. The $580 amount is based on the average cost to rehabilitate one raptor at the California Raptor Center, affiliated with the UC Davis School of Veterinary Medicine, which receives more than 200 injured or ill raptors annually (Stedman pers. comm.). Ten-year installments are more advantageous than more frequent installments for planning and budgeting purposes.

The~~se~~ funds will be contributed to an entity or entities engaged in these activities~~, including, but not necessarily limited to,~~such as the East Bay Regional Park District and the Livermore Area Regional Park District. Conservation efforts may include constructing and installing nest boxes and perches, conducting an awareness campaign to reduce the use of rodenticide, and conducting research to benefit raptors. The specific conservation effort to be pursued will be submitted to the County for approval as part of the ~~Raptor Mitigation Plan~~avian conservation strategy review process. The donation receipt will be provided to the County as evidence of payment.

The first contributions for any given project will be based on the estimated number of raptor fatalities as described above in this measure or as developed in the project-specific EIR for future projects. Funds for subsequent 10-year installments will be provided on the basis of the average annual raptor fatality rates determined through postconstruction monitoring efforts, allowing for a one-time adjustment within each 10-year increment after the results of the monitoring efforts are available. If fewer raptor fatalities are detected through the monitoring effort, the second installment amount may be reduced to account for the difference between the first estimated numbers and the monitoring results.

- **Contribute to regional conservation of raptor habitat.** Project proponents may address regional conservation of raptor habitat by funding the acquisition of conservation easements within the APWRA or on lands in the same eco-region outside the APWRA, subject to County approval, for the purpose of long-term regional conservation of raptor habitat. Lands proposed for conservation must be well-managed grazing lands similar to those on which the projects have been developed. Project proponents will fund the regional conservation and improvement of lands (through habitat enhancement, lead abatement activities, elimination of rodenticides, and/or other measures) using a number of acres equivalent to the conservation benefit of the raptor recovery and conservation efforts described above, or as determined through a project-specific REA (see example REA in Appendix C). The conservation lands must be provided for compensation of a minimum of 10 years of raptor fatalities, as 10-year increments will minimize the transaction costs associated with the identification and conservation of lands, thereby increasing overall cost effectiveness. The conservation easements will be held by an organization whose mission is to purchase and/or otherwise conserve lands, such as The Trust for Public Lands, The Nature Conservancy, California Rangeland Trust, or the East Bay Regional Parks District. The project proponents will obtain approval from the County regarding the amount of conserved lands, any enhancements proposed to increase raptor habitat value, and the entity holding the lands and/or conservation easement.
- **Other Conservation Measures Identified in the Future.** As noted above, additional conservation measures for raptors may become available in the future. Conservation measures for raptors are currently being developed by USFWS and nongovernmental organizations (e.g., American Wind Wildlife Institute)—for example, activities serving to reduce such fatalities elsewhere, and enhancing foraging and nesting habitat. Additional options for conservation could include purchasing credits at an approved mitigation bank, credits for the retirement of windfarms that are particularly dangerous to birds or bats, the curtailment of prey elimination programs, and hunter-education programs that remove sources of lead from the environment. Under this option, the project proponent may make alternative proposals to the County for conservation measures—based on an REA or similar compensation assessment—that the County may accept as mitigation if they are deemed by the County to be comparable to or more protective of raptor species than the other options described herein.

E.1.10 Master Response 10—Adaptive Management

Several commenters noted that Mitigation Measure BIO-11i lacked specificity regarding how adaptive management measures would be implemented as well as the types and/or effectiveness of specific ADMMs included in the measure. Several commenters also noted several additional ADMMs that should be considered. In response to these comments, the County has revised Mitigation Measure BIO-11i on page 3.4-110 through 3.4-11 of the Draft PEIR as follows to add additional specificity and to clarify the measure.

Mitigation Measure BIO-11i: Implement an avian adaptive management program

If fatality monitoring described in Mitigation Measure BIO-11g results in an estimate that exceeds the preconstruction baseline fatality estimates (i.e., estimates at the nonrepowered turbines as described in this PEIR) for any focal species or species group (i.e., individual focal species, all focal species, all raptors, all non-raptors, all birds combined), ~~Each~~ project proponents will prepare ~~and implement~~ a project-specific adaptive management plan within 2 months following the availability of the fatality monitoring results. These plans will be used to adjust operation and mitigation to the results of monitoring, new technology, and new research to ensure that the best available science is used ~~to assess impacts and that~~to minimize impacts ~~are minimized~~ to ~~the greatest extent possible~~below baseline~~. Baseline fatality estimates (i.e., estimates at the nonrepowered turbines) will be used as the thresholds to trigger implementation of adaptive management measures (ADMMs).~~. Project-specific adaptive management plans will be reviewed by the TAC, revised by project proponents as necessary, and approved by the County. The TAC will take current research and the most effective impact reduction strategies into account when reviewing adaptive management plans and suggesting measures to reduce impacts. The project-specific adaptive management plans will be implemented within 2 months of approval by the County. The plans will include a stepped approach whereby an adaptive measure or measures are implemented, the results are monitored for success or failure for a year, and additional adaptive measures are added as necessary, followed by another year of monitoring, until the success criteria are achieved (i.e., estimated fatalities are below the baseline). Project proponents should use the best measures available when the plan is prepared in consideration of the specific adaptive management needs. For example, if only one threshold is exceeded, such as golden eagle fatalities, the plan and measures used will target that species. As set forth in other agreements in the APWRA, project proponents may also focus adaptive management measures on individual or multiple turbines~~,~~ if those turbines are shown to cause a significantly disproportionate number of fatalities.

In general, the following types of measures will be considered by the TAC, in the order they are presented below~~.~~; however, the TAC may recommend any of these or other measures that are shown to be successful in reducing the impact.

~~Threshold 1~~

~~If postconstruction fatality monitoring results in a point estimate for total fatalities that exceeds the preconstruction baseline fatality estimates for 1 year for any focal species or species group (i.e., all focal species, all raptors, all non-raptors, all birds combined), then the following ADMMs for avian species will be implemented.~~

ADMM-1: Visual Modifications. The project proponent ~~will~~ could paint a pattern on a proportion of the turbine blades. The proportion and the pattern of the blades to be painted will be determined by the County in consultation with the TAC. USFWS recommends testing measures to reduce *motion smear*—the blurring of turbine blades due to rapid rotation that renders them less visible and hence more perilous to birds in flight. Suggested techniques include painting blades with staggered stripes or painting one blade black. The project proponent will conduct fatality studies on a controlled number of painted and unpainted turbines. The project proponent will coordinate with the TAC to determine the location of the painted turbines, but the intent is to implement this measure in areas that appear to be contributing most to the high number of fatalities detected.

~~Threshold 2~~

~~If postconstruction fatality monitoring results in a point estimate for total fatalities that exceeds the preconstruction baseline fatality estimates for 2 consecutive years for any focal species or species group (i.e., all focal species, all raptors, all non-raptors, all birds combined), then the following ADMMs will be implemented in addition to ADMM-1.~~

ADMM-2: Anti-Perching Measures. The County will consult with the TAC regarding the use of anti-perching measures to discourage bird use of the area. The TAC will use the most recent research and information available to determine, on a case-by–case basis, if anti-perching measures will be an effective strategy to reduce impacts. If determined to be feasible, a~~A~~nti-perching devices will be installed on ~~all~~ artificial structures, excluding utility poles, within 1 mile of project facilities (with landowner permission) to discourage bird use of the area.

ADMM-3: Prey Reduction. The project proponent will implement a prey reduction program around the most hazardous turbines. Examples of prey reduction measures may include changes in grazing practices to make the area less desirable for prey species, active reduction through direct removal of prey species, or other measures provided they are consistent with management goals for threatened and endangered species.

ADMM-~~4~~3: ~~Contribution to Research~~Implementation of Experimental Technologies. ~~The project proponent will contribute $2,000 for each golden eagle fatality exceeding thresholds to support research of new technologies to help reduce turbine-related fatalities. Similarly, the p~~Project proponents ~~could~~ can deploy experimental technologies ~~at a comparable cost (if appropriate innovations become available)~~ at ~~its~~ their facilities to test their efficacy in reducing turbine-related fatalities. Examples may include, but are not limited to, visual deterrents, noise deterrents, and active radar systems. ~~Research could also investigate bird-turbine interactions, including population-level effects. The last golden eagle inventory of the APWRA vicinity was conducted in 2005 (Hunt and Hunt 2006). The researchers suggested that an inventory of the APWRA golden eagle population be conducted every 5 years to track population trends and the impacts of turbine-related fatalities in the APWRA.~~

~~Threshold 3~~

~~If postconstruction fatality monitoring results in a point estimate for total fatalities that exceeds the preconstruction baseline fatality estimates for 3 consecutive years for any focal species or species group (i.e., all focal species, all raptors, all non-raptors, all birds combined), then the following ADMMs will be implemented in addition to ADMM-1 through ADMM-3.~~

ADMM-~~5~~4: Turbine Curtailment. If postconstruction monitoring indicates patterns of turbine-caused fatalities—such as seasonal spikes in fatalities, topographic or other environmental features associated with high numbers of fatalities, or other factors that can potentially be manipulated and that suggest that curtailment of a specific turbine's operation would result in reducing future avian fatalities—the project operator ~~will~~ can curtail operations of the offending turbine or turbines. Curtailment restrictions would be developed in coordination with the TAC and based on currently available fatality data, use data, and research.

ADMM-~~6~~5: Cut-in Speed Study. ~~A statistically valid cut-in-speed study will~~Changes in cut-in speed could be conducted to see if changing cut-in speeds from 3 meters per second to 5 meters per second (for example) would significantly reduce avian fatalities. The proponent will coordinate with the TAC in ~~designing the study~~determining the feasibility of the measure for the particular species affected as well as the amount of the change in the cut-in speed. ~~. Should increasing the cut-in speed be shown to have positive results while bird fatalities beyond the threshold continue at other turbines, cut-in speed restrictions will be implemented.~~

ADMM-~~7~~6: Real-Time Turbine Curtailment. ~~(only if threshold for raptors is exceeded). If the above measures prove ineffective, then~~ T~~t~~he project proponent ~~will~~ can employ a real-time turbine curtailment program designed in ~~conjunction~~ consultation with the TAC. The intent ~~is~~ would be to

deploy a biologist to monitor onsite conditions and issue a curtailment order when raptors are near operating turbines. Alternatively, radar, video, or other monitoring measures ~~may~~ could be deployed in place of a biological monitor if there is evidence to indicate that such a system would be as effective and more efficient than use of a human monitor.

E.1.11 Master Response 11—Bat Impacts and Mitigation

Several commenters expressed opinions regarding the analysis of impacts on bats. These comments can be broadly summarized by the categories listed below.

- Background information regarding bat fatality and monitoring, including more detailed comparisons between old- and new-generation turbines should be expanded, and presentation of bat fatalities should be standardized as fatalities/MW/year.
- Barotrauma associated with turbine blades has not been addressed as a cause of bat mortality.
- Survey protocols should be updated.
- Avoidance and minimization measures should be updated with more recent information, with specific reference to *Bird and Bat Movement Patterns and Mortality at the Montezuma Hills Resource Area* (Johnston et al. 2013).
- Adaptive management measures—particularly measures applied to turbines shown to be of high risk to bats—are insufficiently rigorous.

Bat Fatality and Monitoring

The discussion of Impact BIO-14a-1 on pages 3.4-125 through 3.4-127 of the Draft PEIR summarizes some of the hypotheses available in the literature about the relationship between bat biology and wind energy fatality risk. An expanded comprehensive summary of all literature on the topic would be beyond the scope of a PEIR and would lead the PEIR into speculation. The best available science indicates that migratory species are at disproportionate risk and that a high percentage of fatalities occur during the fall migration season. The specific reasons for these trends have not been conclusively determined, and thus cannot currently inform the design of specific mitigation requirements. What is known about wind turbine–bat interactions has been incorporated into Mitigation Measures BIO-14a (turbine siting) and BIO-14d (adaptive management—specifically, the seasonal turbine cut-in speed increase). The PEIR acknowledges the lack of conclusive information and the likely future developments in effective, proven adaptive management measures and requires that future measures be based on the latest, peer-reviewed science and incorporate emerging technology and methods.

Some comments point to the importance of providing a common metric as the basis of comparison between one wind energy facility and another, or between one timeframe and another, and suggest that this information be included in a more prominent location in the text. While baseline and predicted fatality estimates are provided as deaths/MW/year in the impact discussion section (3.4-126-27), the earlier discussion on observed fatality rates at old-generation turbines has been expanded and the range of existing mortality rates (deaths/MW/year) provided (see below for expansion to mortality rate discussion on 3.4-46). It is important to remember that the common metric can disguise lack of commonality in how that metric was generated, encouraging simplistic comparisons of non-comparable data.

Some comments suggest including more detail on the physical differences between old generation and fourth generation turbines, and what these differences might mean for bat fatality risk. The difference between bat fatality risk at new-generation turbines and old-generation turbines is certainly fundamental to the impact analysis for bats. However, to assign causative roles to physical differences between old-generation and new-generation turbines would be a matter of conjecture in the absence of controlled studies.

The reasons for the historically low fatality rates at old-generation turbines are unknown and relatively unstudied, and may simply be an artifact of monitoring programs that were not designed to detect and study bat fatality. With regard to including reference to old-generation turbines not having lights, studies have not shown a correlation between the presence of FAA lights required on new-generation turbines and bat fatality (Ellison 2012:11). The matter of potential differences in air pressure changes due to physical differences in the design of old and new generation turbines is discussed below in *Barotrauma*. One of the fundamental physical differences between old- and new-generation turbines that has been correlated with increased bat fatalities, at least in some studies, is tower height. The discussion of Impact Bio-14a-1 on pages 3.4-125 and 3.4-126 summarizes some of the hypotheses for increased blade collision risk to migratory bat species from fourth-generation turbines.

The discussion of *Bat Fatality and Monitoring* on page 3.4-46 of the Draft PEIR has been expanded as shown below.

> The APWRA supports habitat types suitable for maternity, foraging, and migration for special-status and common bats. Several of these species are susceptible to direct mortality through collision or other interactions with wind turbines. Five species of bat have been documented as fatalities in the APWRA: little brown bat, California myotis, western red bat, hoary bat, and Mexican free-tailed bat (Table 3.4-6) (Insignia Environmental 2012:47–48; ICF International 2013:3-3). Hoary bats and Mexican free-tailed bats have made up the majority of documented fatalities; western red bat, another migratory species and a California species of special concern, has sustained the third highest number of documented fatalities.~~Studies at wind energy facilities in North America generally show strong seasonal and species-composition patterns in bat fatalities, with the bulk of fatalities consisting of migratory species and occurring in late summer to mid-autu~~
>
> Other than fatality records, occurrence data for bat species in the APWRA are limited, and expectations of presence are generally based on known ranges and habitat associations. However, preliminary analysis of pre- and postconstruction acoustic survey data from the recently repowered Vasco Winds facility in the Contra Costa County portion of the APWRA documents the presence of four additional species (big brown bat, silver-haired bat, canyon bat, and Yuma myotis). Acoustic surveys indicated bat activity in all three seasons in which surveys were conducted, with a spike in activity in the fall (Pandion Systems 2010; Szewczak 2013). Mexican free-tailed bat and hoary bat comprised the majority of the acoustic detections (Pandion Systems 2010).
>
> Relatively little is known about bat biology as it relates to fatality risk at wind energy facilities. Limited knowledge of such factors as migration, mating behavior, behavior around turbines, and seasonal movements impede efforts to predict risk of turbine collision. Studies at wind energy facilities in North America generally show strong seasonal and species-composition patterns in bat fatalities, with the bulk of fatalities consisting of migratory species and occurring in late summer to mid-autumn. As in other parts of North America, the majority of documented fatalities in the APWRA have occurred during the fall migration season and have consisted of migratory bat species.
>
> ~~Historically, the number of bat fatalities detected as part of the avian fatality monitoring program at old-generation turbines in the APWRA has been extremely low, due at least in part to the monitoring program's design, which has focused on bird mortality. Five species of bat have been documented as fatalities in the APWRA: little brown bat, California myotis, western red bat, hoary bat, and Mexican~~

~~free-tailed bat (Table 3.4-6) (Insignia Environmental 2012:47–48; ICF International 2013:3-3). As in other parts of North America, the majority of documented fatalities in the APWRA have occurred during the fall migration season and have consisted of migratory bat species. Hoary bats and Mexican free-tailed bats have made up the majority of documented fatalities; western red bat, another migratory species and a California species of special concern, has sustained the third highest number of documented fatalities.~~

Historically, the number of bat fatalities detected as part of the avian fatality monitoring program at old-generation turbines in the APWRA has been extremely low, due at least in part to the monitoring program's design, which has focused on bird mortality. As previous study methods were not designed to generate defensible bat mortality rates, and as new generation turbines may pose novel threats to bats, assumptions of species vulnerability based on extrapolation from the older turbine technologies present in the APWRA are not necessarily valid (California Bat Working Group 2006).~~Relatively little is known about bat biology as it relates to fatality risk at wind energy facilities. Limited knowledge of such factors as migration, mating behavior, behavior around turbines, and seasonal movements impede efforts to predict risk of turbine collisio~~

Calculating adjusted bat fatality rates at old generation turbines using data collected under the early avian monitoring program is problematic both because the sample size is low and because monitoring and analysis methods were not designed to detect and adjust for these types of fatalities. In their paper grappling with comparisons of fatality rates between old--generation turbines at the APWRA and early repowering projects, Smallwood and Karas (2009) illustrated these points by acknowledging that all of their old-generation bat fatality estimates are likely biased low (2009:1065)~~,~~ and that differences observed in comparisons of various bat fatality estimates, even those as seemingly significant as 800%, could not be statistically defended due to the small sample sizes involved (Smallwood and Karas 2009:1066–67).

Bat fatality rates available for old--generation turbines at the APWRA are as follows. For the earlier years, covering 1998–2002 and a combination of turbine models, nameplate capacities, and designs, Smallwood and Karas presented a bat fatality rate estimate of 0.115 (SE+- 0.073) bat deaths/MW/year (2009:-1066). For more recent old-generation turbine monitoring years (2005–2007), Smallwood and Karas presented a bat fatality rate estimate of 0.263 (SE+ 0.172) bat deaths/MW/ year, (used as the baseline in this PEIR) (2009:1066).

Bat fatality rates documented at the three repowered projects in the APWRA vary. These rates were also generated using different search efforts and different adjustment calculations, making direct comparison problematic, despite the common metric reported. For the Diablo Winds Energy Project (2005–2007), Smallwood and Karas (2009:1067) reported a bat fatality rate estimate of 0.783 (SE+- 0.548)/MW/year; for the Buena Vista Wind Farm (2008-2010), Insignia Environmental (2012:ES-3) reported a bat fatality rate range of 0.48–1.08/MW/year, depending on calculation methods; for the first year of the Vasco Winds repowering project (2012–2013), Brown et al. (2013:35–36) reported a bat fatality rate range of 0.663 (SE+- 0.486) to 2.281 (SE+- 1.06)/MW/year, with the "best estimate" rate reported as 1.679 (SE+- 0.801)/MW/year (2013:39).

Consistent across all documented rates, though methods used to generate these rates vary, is that reported bat fatality rates increased when old-generation turbines were replaced by newer, larger turbines (Smallwood and Karas 2009:1068). Turbines used in future repowering projects are likely to be similar in size to the Vasco Winds turbines but much larger than the Diablo Winds and Buena Vista turbines in both overall size and rated nameplate capacity. In a meta-analysis of bat fatalities at numerous wind energy facilities in North America, Barclay et al. found that bat fatality increased exponentially with increasing turbine height (2007:384).

The limited data available for the program area and vicinity suggest the potential for similar species composition and temporal patterns of bat mortality to those that have been documented at the Vasco Winds repowering project and at other fourth-generation wind energy facilities, such as those in the Montezuma Hills Wind Resource Area.

Barotrauma

This avenue of inquiry was intentionally not pursued in the PEIR, as it was determined to be of limited application to the purpose of the PEIR for several reasons. (1) Barotrauma (internal damage caused by a shift in external air pressure) has not been conclusively accepted as a significant cause of bat fatality at wind energy facilities and has been deemed unlikely to be a primary causal factor by recent modeling studies, particularly at the wind speeds at which most bat fatalities occur (National Renewable Energy Lab National Wind Technology Center 2013). In a detailed study of bat carcasses found at a wind energy facility, Grodsky et al. (2011:922) noted that attribution of cause of death to a single factor was not possible even when each carcass was subject to an advanced battery of veterinary diagnostic techniques. Without knowing whether or to what degree pressure changes influence bat fatality, analyzing variations in localized air pressure changes between turbine models would not generate usable information. (2) Old-generation turbines in the APWRA consist of numerous turbine models with variations in turbine height, operation, and nameplate capacity. This range of variation would make an analysis of specific differences in air pressure effects between old- and new-generation turbines excessively problematic. In light of the lack of applicable data that would result, such an effort could not be justified in the scope of this PEIR. (3) The County is not aware of any mitigation measures that would apply to one proximate cause of death and not another. Whether death is caused by turbine blade strike or turbine-induced barotrauma, the current mitigation options remain the same, making proximate cause of death moot in the current mitigation-option landscape.

Survey Protocols

Two commenters questioned a provision suggesting that only roads and pads would be surveyed for bat fatalities. Other comments stated that the referenced acoustic sampling guidelines are out of date. In response to these comments, Mitigation Measure BIO-14b has been revised as shown at the end of this Master Response.

Avoidance and Minimization Measures

The article suggested by USFWS has been reviewed again for applicable avoidance and minimization measures. Johnston et al. (2013) describe observed patterns of bird and bat movements and activity at study sites in the Montezuma Hills Wind Resource Area using three tools available to monitor nighttime activity of birds and bats: radar, particularly altitude-specific radar; night-vision equipment; and passive acoustic monitoring. As the authors state (Johnston et al. 2013:90–91), the recommendations they put forward are for increased efforts to (1) determine more precisely how parameters such as “barometric pressure changes, wind direction and time of day” affect bat movement patterns at a given site to subsequently allow more specific turbine curtailment regimes than the blanket ones generally proposed; and (2) determine whether there is a relationship between the location of certain habitat features and the risk of bat fatality. Although monitoring factors such as wind direction and barometric pressure and the use of radar to monitor for high-risk bat activity are not explicitly identified in the Draft PEIR, such approaches are implicitly supported through the adaptive management approach, should scientifically defensible, conclusive results emerge in the future.

Adaptive Management

Some commenters stressed seasonal shutdowns, increased cut-in speeds, and curtailment of high-risk turbines.

Literature reviewed for this document did not agree with one commenter that cut-in speeds greater 5.0 m/s have proven to be ineffective. Weller and Baldwin (2011:11) noted that "Previous studies have documented that reducing cut-in wind speeds from approximately 3 m/s to approximately 6 m/s resulted in about half as many bat fatalities with relatively modest reductions in power production (Baerwald et al. 2009, Arnett et al. 2011)." Additionally, as noted by Johnston et al. 2013, while most bat fatalities show positive correlation with nights of low wind speed, the same is not necessarily true for Mexican free-tailed bats, known to be strong fliers. Johnston et al. (2013: 86–87) noted an increased probability of encountering a Mexican free-tailed bat fatality on nights with "stronger winds," that the association of bat fatality with lower wind speeds in North America "has involved studies conducted outside the range of the Mexican free-tailed bat," and that in European studies, "the strongest flier (*Nyctalus noctual*) of four species of at-risk, aerially foraging bats typically is killed during higher average wind speeds (Seiche 2008 in Rydell et al. 2011)." This correlation suggests a potential utility in increasing cut-in speeds beyond levels previously studied if significant fatalities of Mexican free-tailed bats are the target of mitigation actions. Mexican free-tailed bats are well represented in fatality data from both the repowered Vasco Winds project (Brown et al. 2013:23) and the nearby Montezuma Hills Wind Resource Area (Johnston et al. 2013:F-2, F-4).

Applying mitigation approaches, whether seasonal shutdown or cut-in speed increases, only to those turbines that are significantly more hazardous to bats than others would be the most cost-efficient and biologically effective approach. However, the identification of an individual turbine as having a significantly higher mortality rate is, in practice, extremely difficult. Experience has shown that a turbine with the highest mortality rate in one year will not necessarily have the highest rate in subsequent years, so annual variation must be taken into account. The required mortality monitoring period proposed in the PEIR is 3 years, which may not be sufficient to generate defensible proof that certain turbines are a significantly greater risk to bats. In addition, sample sizes are typically too small to identify statistically significant differences in the mortality rates from one turbine to the next.

Regarding the appropriateness of employing seasonal shutdown as a primary adaptive management mitigation measure, the cut-in speed adjustment (increasing the cut-in speed so that wind turbines do not operate in low wind when most bat species are most likely to be active) is the measure known to be effective for bats. Seasonal shutdowns as a first approach would certainly avoid bat fatality but would also avoid the purpose of the project for that time period, without knowing whether employing a complete shutdown would generate significantly less bat fatality than employing cut-in speed increases already described. Should cut-in speed increases and other approaches fail to reduce mortality, the County, under guidance from the TAC, has the ability to adjust adaptive management measures, and could consider seasonal shutdown if deemed appropriate.

Implicit to the adaptive management mitigation approach is the ability of the TAC to respond to scientifically sound site-specific data by implementing customized mitigation solutions. For a revised description of the composition and responsibilities of the TAC, please refer to Master Response 6. Revisions to Mitigation Measures BIO-14a, BIO-14b, and BIO-14d are shown below.

Mitigation Measure BIO-14a: Site and select turbines to minimize potential mortality of bats

All project proponents will use the best information available to site turbines and to select from turbine models in such a manner as to reduce bat collision risk. The siting and selection process will take into account bat use of the area and landscape features known to increase collision risk (trees, edge habitats, riparian areas, water bodies, and wetlands). Measures include but are not limited to siting turbines the greatest distance feasible up to 500 meters (1,640) feet from still or flowing bodies of water, riparian habitat, known roosts, and tree stands (California Bat Working Group 2006:6).

To generate site-specific "best information" to inform turbine siting and operation decisions, a bat habitat assessment and roost survey will be conducted in the project area to identify and map habitat of potential significance to bats, such as potential roost sites (trees and shrubs, significant rock formations, artificial structures) and water sources. Turbine siting decisions will incorporate relevant bat use survey data and bat fatality records published by other projects in the APWRA. Roost surveys will be carried out according to the methods described in Mitigation Measure-BIO-12a.

Mitigation Measure BIO-14b: Implement postconstruction bat fatality monitoring program for all repowering projects

A scientifically defensible, postconstruction bat fatality monitoring program will be implemented to estimate actual bat fatalities and determine if additional mitigation is required. Bat-specific modifications to the 3-year postconstruction monitoring program described in Mitigation Measure BIO-11g, developed in accordance with CEC 2007 and with appropriate recommendations from California Bat Working Group guidelines (2006), will be implemented.

In addition to the requirements outlined in Mitigation Measure BIO-11g, the following ~~two~~ bat-specific requirements will be added.

- Include on the TAC at least one biologist with significant expertise in bat research and wind energy impacts on bats.
- Conduct bat acoustic surveys concurrently with fatality monitoring in the project area to estimate nightly, seasonal, or annual variations in relative activity and species use patterns, and to contribute to the body of knowledge on seasonal bat movements and relationships between ~~acoustic~~ bat activity, environmental variables, and turbine fatality. Should emerging research support the approach, these data may be used to generate site-specific predictive models to increase the precision and effectiveness of mitigation measures (e.g., the season-specific, multivariate models described by Weller and Baldwin 2011:-11). Acoustic bat surveys will be designed, and data analysis ~~will be~~ conducted, by qualified biologists with significant experience in acoustic bat survey techniques. ~~in accordance with~~ Methods will be informed by the latest available guidelines (California Energy Commission guidelines, (2007), California Bat Working Group guidelines, (2006), except where best available science supports technological or methodological updates. High-quality, sensitive acoustic equipment will be used to produce data of sufficient quality to generate species identifications.~~and best available science to obtain data on species composition and season of occurrence and relative bat activity patterns over time.~~ Survey design and methods will be scientifically defensible and will include, at a minimum, the following elements.
    - Acoustic detectors will be installed at multiple stations to adequately sample range of habitats in the project area for both resident and migratory bats. The number and locations for acoustic monitoring will be developed in consultation with the TAC. The number of detector arrays installed per project site should incorporate emerging research on the density of detectors required to adequately meet sampling goals and inform mitigation approaches (Weller and Baldwin 2011:10).
    - Acoustic detector arrays will ~~be mounted on vertical structures to~~ sample multiple airspace heights including as close to the repowered rotor swept area as possible. ~~-~~Vertical structures used for mounting may be preexisting or may be installed for the project (e.g., temporary or permanent meteorological towers).

- Surveys will be conducted such that data are collected continuously for a minimum of 90 days ~~from~~ between ~~early July~~mid-August ~~to~~ and ~~early~~ mid- November to cover the activity transition from maternity to migration season and determine if there is elevated activity during migration. Survey season may be adjusted to more accurately reflect the full extent of the local migration season~~,~~ and/or season(s) of greatest local bat fatality risk, if scientifically sound data support doing so.
- Anticipated adaptive management goals, such as determining justifiable timeframes to reduce required periods of cut-in speed adjustments, will be reviewed with the TAC and incorporated in designing the acoustic monitoring and data analysis program.

Modifications to the fatality search protocol will be implemented to obtain better information on the number and timing of bat fatalities (e.g., Johnston et al.~~,~~ 2013:~~-~~85). Modifications ~~may~~ will include decreases in the transect width and search interval for a period of time coinciding with high levels of bat mortality, i.e., the fall migration season (roughly August to early November, or as appropriate in the view of the TAC). The ~~need~~ nature of ~~for~~ bat-specific transect distance and search intervals will be determined in consultation with the TAC~~,~~ and will be guided by scientifically sound and pertinent data on rates of bat carcass detection at wind energy facilities (e.g., Johnston et al. 2013:~~-~~54~~–~~55) and site-specific data from APWRA repowering project fatality monitoring programs as these data become available.

Other methods to achieve the goals of the bat fatality monitoring program while avoiding prohibitive costs may be considered subject to approval by the TAC, if these methods have been peer reviewed and evidence indicates the methods are effective. For example, if project proponents wish to have the option of altering search methodology to a newly developed method, such as searching only roads and pads (Good et al. 2011:73), a statistically robust field study to index the results of the methodology against standard search methods will be conducted concurrently to ensure site-specific, long-term validity of the new methods.

~~One example of such an approach is to increase the efficiency of fatality searches by reducing the search plot to encompass only the gravel roads and pads around turbines, where bat fatalities may be easier to find. At one wind energy site in Indiana, this approach has generated comparable fatality estimates to those of standard search plots (Good et al. 2011:73).~~

Finally, detection probability trials will utilize bat carcasses to develop bat-specific detection probabilities. Care should be taken to avoid introducing novel disease reservoirs; such avoidance will entail using onsite fatalities or using carcasses obtained from within a reasonably anticipated flight distance for that species.

Mitigation Measure BIO-14c: Prepare and publish annual monitoring reports on the findings of bat use of the project area and fatality monitoring results

Annual reports of bat use results and fatality monitoring will be produced within 3 months of the end of the last day of fatality monitoring. Special-status bat species records will be reported to CNDDB.

Mitigation Measure BIO-14d: Develop and implement a bat adaptive management plan

In concert with Mitigation Measure BIO-14b, all project proponents will develop adaptive management plans to ensure appropriate, feasible, and current incorporation of emerging information. The goals of the adaptive management plans are to ensure that the best available science and emerging technologies are used to assess impacts on bats, and that impacts are minimized to the greatest extent possible while maximizing energy production.

The project-specific adaptive management plans ~~These plans~~ will be used to adjust operation and mitigation to incorporate the results of project area monitoring and new technology and research results when sufficient evidence exists to support these new approaches. These plans will be reviewed by the TAC and approved by the County. All adaptive management measures will be implemented within a reasonable timeframe, sufficient to allow the measures to take effect in the first fall migration season following the year of monitoring in which the adaptive management threshold was crossed. ADMMs may be modified by the County in consultation with the TAC to take

into account current research, site-specific data, and the most effective impact reduction strategies. ADMMs will include a scientifically defensible, controlled research component and minimum post-implementation monitoring time to evaluate the effectiveness and validity of the measures. The minimum monitoring time will consist of three sequential fall seasons of the bat-specific mortality monitoring program covering the 3–4 months of the year in which the highest bat mortality has been observed: likely August–November. The start and end dates of the 3–4 months of bat-specific mortality monitoring period will be based on existing fatality data and in consultation with the TAC.

Determining a fatality threshold to trigger adaptive management is not straightforward, as insufficient information exists on the status and vitality of the populations of migratory bat species subject to mortality in the APWRA. The low estimate of anticipated bat fatality rates is from the Vasco Winds project in the APWRA. Applying this rate programmatically would result in an estimate of 21,000 bats killed over the 30-year life of the program. The high estimate is from the Montezuma Hills Wind Resource Area. Applying this rate programmatically would result in an estimate of 49,050 bats killed over the 30-year life of the program. Bats are slow to reproduce, and turbines may be more likely to kill adult bats than juveniles, suggesting that a conservative approach is warranted. Accordingly, an initial adaptive management threshold will be established using the low fatality estimates, or 1.679 fatalities/MW/year, to ensure that the most conservative trigger for implementation of adaptive management measures is adopted.

If postconstruction fatality monitoring results in a point estimate for the bat fatality rate that exceeds the 1.679 fatalities/MW/year threshold by a statistically significant amount, then, in consultation with the TAC, ADMM-7 and ADMM-8 (described below) for bats will be implemented.

It is important to note that neither the high nor the low estimate speaks to the ability of bat populations to withstand the associated levels of take. The initial fatality rate threshold triggering adaptive management may be modified by the TAC if appropriate and if such adaptation is supported by the best available science.

The TAC may direct implementation of adaptive management measures for other appropriate reasons, such as an unexpectedly and markedly high fatality rate observed for any bat species, or special-status species being killed in unexpectedly high numbers.

ADMMs for bats may be implemented using a stepped approach until necessary fatality reductions are reached, and monitoring methods must be revised as needed to ensure accurate measurement of the effectiveness of the ADMMs. Additional ADMMs for bats should be developed as new technologies or science supports doing so.

ADMM-7: Seasonal Turbine Cut-in Speed Increase. Cut-in speed increases offer the most promising and immediately available approach to reducing bat fatalities at fourth-generation wind turbines. Reductions in fatalities (53–87%) were observed when increasing modern turbine cut-in speed to 5.0–6.5 m/s (Arnett et al. 2009:3; Good et al. 2012:iii). While implementing this measure immediately upon a project's commencement would likely reduce bat fatalities, that assumption is not yet supported by conclusive data. Moreover, without establishing baseline fatality at repowered projects, there would be no way to determine the effectiveness of the approach or whether the costs of increased cut-in speeds (and consequent power generation reductions) were providing fatality reductions.

Cut-in speed increases will be implemented as outlined below, with effectiveness assessed annually.

- The project proponent will increase cut-in speed to 5.0 m/s from sunset to sunrise during peak migration season (generally August–October). If this is ineffective, the project proponent will increase turbine cut-in speed by annual increments of 0.5 m/s until target fatality reductions are achieved.
- The project proponent may refine site-specific migration start dates on the basis of pre- and postconstruction acoustic surveys and ongoing review of dates of fatality occurrences for migratory bats in the APWRA.

- The project proponent may request a shorter season of required cut-in speed increases with substantial evidence that similar levels of mortality reduction could be achieved. Should resource agencies and the TAC find there is sufficient support for a shorter period (as low as 8 weeks), evidence in support of this shorter period will be documented for the public record and the shorter period may be implemented.
- The project proponent may request shorter nightly periods of cut-in speed increases with substantial evidence from defensible onsite, long-term postconstruction acoustic surveys indicating predictable nightly timeframes when target species appear not to be active. Target species are here defined as migratory bats or any other species appearing repeatedly in the fatality records.
- The project proponent may request exceptions to cut-in speed increases for particular weather events or wind patterns if substantial evidence is available from onsite acoustic or other monitoring to support such exceptions (i.e., all available literature and onsite surveys indicate that bat activity ceases during specific weather events or other predictable conditions).
- In the absence of defensible site-specific data, mandatory cut-in speed increases will commence on August 1 and continue through October 31, and will be in effect from sunset to sunrise.

ADMM-8: Emerging Technology as Mitigation. The project proponent may request, with consultation and approval from agencies, replacement or augmentation of cut-in speed increases with developing technology or another mitigation approach that has been proven to achieve similar bat fatality reductions.

The project proponent may also request the second tier of adaptive management to be the adoption of a promising but not fully proven technology or mitigation method. These requests are subject to review and approval by the TAC and must include a controlled research component designed by a qualified principal investigator so that the effectiveness of the method may be accurately assessed.

Some examples of such emerging technologies and research areas that could be incorporated in adaptive management plans are listed below.

- The use of acoustic deterrents (Arnett et al. 2013:1).
- <u>The use of altitude-specific radar, night vision and/or other technology allowing bat use monitoring and assessment of at-risk</u> bat behavior <u>(Johnston et al. 2013: 90-91) if research in these areas advances sufficiently to allow effective application of these technologies.</u>
- Application of emerging peer-reviewed studies on bat biology (such as studies documenting migratory corridors or bat behavior in relation to turbines) that support specific mitigation methods.

E.2 Federal Agencies

FA-1—U.S. Fish and Wildlife Service

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Southwest Region
2800 Cottage Way, Suite W-2606
Sacramento, California 95825

In Response Reply To:
FWS/R8/MB&SP

Mrs. Sandra Rivera
County of Alameda
244 W. Winton Avenue, Room 111
Hayward, CA 94544

JUL 24 2014

Dear Mrs. Rivera,

The mission of the U.S. Fish and Wildlife Service (Service) is to work with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. As part of this, we are charged with implementing statutes including the Endangered Species Act (7 U.S.C. § 1531 *et seq.*; ESA), Migratory Bird Treaty Act (16 U.S.C. § 703 *et seq.*; MBTA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d; Eagle Act). We have reviewed Alameda County's Draft Program Environmental Impact Report: Altamont Pass Wind Resource Area Repowering (DPEIR). The DPEIR analyzes the anticipated approval by Alameda County of new Conditional Use Permits (CUPs) to allow new and repowered wind-farm uses in the Altamont Pass Wind Resource Area (APWRA). In this letter we have focused our comments on our legal mandate and trust responsibility to maintain healthy migratory bird populations for the benefit of the American public pursuant to the MBTA and the Eagle Act.

The MBTA prohibits the taking, killing, possession, transportation and importation of migratory birds, their eggs, parts, and nests, except when authorized by the Secretary of the Interior. Because the MBTA does not provide a specific mechanism to permit "incidental" take, it is important for proponents to work proactively with the Service to avoid and minimize take to the degree practicable. We recognize that some birds may be killed at renewable energy developments, even if all reasonable measures to avoid it are implemented.

The Eagle Act prohibits all take of eagles unless otherwise authorized by the Secretary of the Interior. A goal of the Eagle Act is to ensure that any take of bald eagles (*Haliaeetus leucocephalus*) or golden eagles (*Aquila chrysaetos*) is compatible with the preservation of each species, which the Service has interpreted as maintaining stable or increasing breeding populations. "Take" under the Eagle Act is defined as "to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, disturb individuals, their nests and eggs..." "Disturb" was defined in 2007 (72 FR 31132) as "to agitate or bother a bald or golden eagle to a degree that causes…injury to an eagle, reduced productivity, or nest abandonment…" In 2009, two new permit rules were created for eagles. Regulation 50 CFR 22.26 can authorize limited take of bald and golden eagles when the take is associated with, but not the purpose of, an otherwise lawful activity, and cannot practicably be avoided. Take of eagles associated with the operation of wind energy facilities can be permitted under this authority.

FA-1—U.S. Fish and Wildlife Service

To ensure that any take of eagles does not exceed the Eagle Act's preservation standard, the Service set regional thresholds (i.e., upper limits) for take of each eagle species using methodology described in the Final Environmental Analysis (FEA) of the Eagle Permit Rule (Service 2009). We also put in place measures to ensure that local eagle populations are not depleted by take that would be otherwise regionally acceptable. As described in our *Eagle Conservation Plan Guidance Module 1: Land-based Wind Energy Version 2* (Service 2013, ECP Guidance), it is the Service's policy that take rates for a local-area population (140 miles for golden eagles) should not exceed 5% annually, whether the impacts of a given project have been offset by compensatory mitigation or not, to ensure sustainable populations of eagles.

In our Environmental Analysis for an eagle take permit at the Shiloh IV Wind Farm located about 30 miles from the APWRA (Service 2014), we determined that the current take rate for the APWRA golden eagle local-area population is approximately 12% annually. We are concerned that this level of ongoing take is having a negative effect on the local-area population of golden eagles and could affect the sustainability of this population. 1

Please contact Heather Beeler, Eagle Permit Coordinator at (916) 414-6651, if you have any questions.

Sincerely,

J. Ervin Dawson Jr.

Assistant Regional Director
Migratory Birds and State Programs

Attachment

FA-1—U.S. Fish and Wildlife Service

Literature Cited

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FA-1—U.S. Fish and Wildlife Service

Attachment

Summary Comments

Overall, the Service is supportive of the bird and bat biological mitigation measures and adaptive management conservation measures outlined in the DPEIR. Many of these measures are consistent with our permitting guidance and policies for eagles. We appreciate the County's efforts to provide a compatible process. Our detailed comments on the DPEIR and associated conditions are attached. 2

We are concerned that the DPEIR's avian fatality analysis methods may underestimate risk to the focal species (including golden eagles), other birds and bats. Our concern is based on the following: 3

1) As you acknowledged in the DPEIR, the Diablo Winds Project is not representative of the projects that are being built with newer turbine technology.
2) The Buena Vista Wind Project's mortality monitoring study implemented flawed carcass removal and observer bias trials; therefore it may not be appropriate to rely on conclusions from this mortality report.
3) The Vasco Wind Project's first year's mortality monitoring results only show that one golden eagle was taken in the first year of monitoring. Although the report on the second year of monitoring has not been completed yet, we know of four additional eagle mortalities reported during the second year of monitoring.

Due to inherent annual variation in eagle use and reproductive efforts in the area, relying on a single year of mortality data could result in under- or over-estimating impacts. The amount of raptor mitigation required in the DPEIR is based solely upon the Vasco Wind Project's first year mortality results. Averaging multiple years of mortality data would provide a more realistic impact assessment. Our attachment provides more specific recommendations on this topic.

Eagles will continue to be at risk throughout the APWRA. We encourage Alameda County to require wind operators to follow the Service's ECP Guidance (Service 2013) and to apply for programmatic eagle take permits. The Service regards adherence to our ECP Guidance, Final Land-Based Wind Energy Guidelines (Service 2012) and early communication and collaboration with the Service (which includes sharing records such as results of studies, audits, monitoring, eagle and bird protection plans and other useful documents) as evidence of due care with respect to avoiding, minimizing, and mitigating significant adverse impacts to bats and to species protected under the MBTA and Eagle Act. The available information is not conclusive that repowering alone, without additional minimization efforts will effectively reduce impacts to birds and bats at wind farms. The goal is to minimize impacts to eagles and other migratory birds and bats in the APWRA. To achieve that goal, we recommend removing lattice tower turbines, repowering in conjunction with careful siting using site-specific biological data and/or informed risk models, and continuing to collaborate with us. 4

The Service has three overall recommendations. First, we encourage Alameda County to require wind operators to follow our ECP Guidance (Service 2013) and apply for programmatic eagle take permits. 5

Second, we recommend that the County approve an alternative that would limit the overall wind energy development in the APWRA to ensure ongoing take of golden eagles does 6

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not exceed 5% of the local-area golden eagle population. Based on our current estimate of ongoing take (47 eagles/year) in the entire APWRA (Alameda and Contra Costa Counties combined), we recommend that you approve an alternative that would limit the overall take within the entire WRA to less than 29 eagles/year. Third, we recommend that the County not approve any new infill of turbines in undisturbed areas of prime grassland/golden eagle habitat until such time that ongoing take can be substantially reduced to a more sustainable level. 6 cont. 7

Detailed Comments

1. Page 3.4-1 & 3.4-2; Migratory Bird Treaty Act: Reference for protected bird list is outdated. Our updated list is available as of December 2, 2014 at: http://www.fws.gov/migratorybirds/regulationspolicies/mbta/List%20of%20MBTA%20Protected%20Species%20December%202013.pdf 8

2. Page 3.4-36; Golden Eagle: We recommend that the Final PEIR better summarize what is known about APWRA eagle populations. How many or how close is the nearest nest and/or nesting habitat to the project areas/specific projects? We recommend including: 9
   - A reference that Hunt (2006) found that this area hosts the highest known density of golden eagles in the world
   - Mention that California Natural Diversity Data Base (CNDDB) is a presence only, non-conclusive database
   - We recommend the species account for golden eagles include a summary of local-area eagle population from *Contra Costa Water District's Annual Monitoring of Golden Eagle Nesting Success on the Los Vaqueros Watershed* (reports available from 2001-2013) that we provided to you on July 8, 2014
   - Summary of the collaborative golden eagle monitoring study by U.S. Geological Survey, East Bay Parks and the Peregrine Fund that is ongoing
   - Summary of eagle behavior/use data for this geographic area: APWRA specific risk models, and APWRA Scientific Review Committee wind turbine siting guidelines developed specifically for the Altamont Pass.

3. Page 3.4-46; Bat Fatality Monitoring. Last paragraph. "Relatively little is known about bat biology as it relates to fatality risk and wind energy facilities." The Service recommends this section be updated to summarize literature on the topic. Specifically, we suggest the DPEIR incorporates bat fatality minimization and avoidance measures from the *CEC-500-2013-015 Report, Birds and Bat Movement Patterns and Mortality at the Montezuma Hills Resource Area.* http://www.solanocounty.com/civicax/filebank/blobdload.aspx?blobid=10104 10

4. Page 3.4-51 – 3.4-53; 11
   - Alameda County has a responsibility to address impacts to all birds, not just focal species and special status species. We recommend at least summarizing impacts to various guilds of birds, focusing on guilds that are anticipated to be most affected by the wind facilities, such as raptors and migratory passerines.

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- Avian fatality analysis methods: The quality of carcass removal and observer bias studies greatly influences fatality estimate results. Therefore, we recommend also calculating carcass detection probability using, or at least incorporating, the APWRA Scientific Research Committee's QAQC Study and other relevant studies conducted recently. 12

5. Page 3.4-86; Mitigation Measure Bio-8a-1, Preconstruction nest surveys should occur within 24 hours of construction activities. We recommend using the Utah Raptor Guidelines to establish buffers for all raptors EXCEPT eagles. 13

6. Surveys should be conducted to locate eagle nests in appropriate habitat within 2 miles of any construction activities. We recommend a one-mile no disturbance buffer be implemented for construction activities (including road construction) to protect nesting birds from disturbance. In coordination with the Service, that buffer may be reduced to ½ mile if disturbance activities are not within direct line of sight of a given nest. 14

7. To minimize risk to eagles or loss of a breeding territory, the Service recommends no turbine be sighted within 2 miles of an active or alternative eagle nest in an active golden eagle territory. Eagles often have alternate nests that they rotate their nesting activities between. Eagle nest surveys should be conducted prior to sighting turbines and again immediately prior to construction activities. 15

8. Page 3.4-98; Impact BIO-11a-1
The analysis should consider impacts to all birds, not just focal raptors and rare, special status species. 16

9. Table 3.4-11; 350 Burrowing Owl mortalities at the repowered Diablo Winds project continue to be high. If this mortality rate continues, the local population may be extirpated in the foreseeable future. We recommend that the County include measures to reduce mortalities of owls at the Diablo Winds project and ensure any future repowered project's impacts to Burrowing Owls are minimized to the extent practicable. 17

10. Page 3.4-105; Mitigation Measure Bio-11f: As noted in your DPEIR, rock piles may provide ground squirrel habitat. The Service recommends rock piles be moved at least 500 meters away from turbines. 18

11. Page 3.4-106; Bio-11g; Technical Advisory Committee (TAC): We suggest that wind operators collectively provide a single qualified biologist to be their appointed TAC representative, instead of each project having a representative. Alternatively, we suggest that the wind operator's TAC representative be a non-voting member of the TAC. 19

12. Page 3.4-107; Bio-11h; The Service is supportive of this suite of Conservation Measures. Some of these requirements are consistent with the Service's requirements to qualify for a Programmatic Eagle Take Permit under the Eagle Act. Where DPEIR mentions our USFWS ECP Guidance, it should include a citation and reference in the Literature Cited. 20

FA-1—U.S. Fish and Wildlife Service

13. Page 3.4-108; The amount of raptor mitigation that would be required under the DPEIR is based solely upon the Vasco Wind Project first year mortality results. We believe that this data underestimates ongoing impacts. We recommend this value be updated with current data in the Final PEIR. At a minimum, we recommend updating the risk analysis and mitigation calculation methods in the Final PEIR using the Vasco Wind Project's second year's mortality report due to be released in August 2014. In addition, we recommend you include a re-evaluation of the mitigation calculation each year, based on averaging the most recent mortality report with prior (up to 3) years' data. 21

14. Page 3.4-111; Bio-11i, Implement an avian adaptive management program. The Service is supportive of an adaptive management program to be implemented if/when a take threshold has been exceeded. 22
    - ADMM-1: The Service recommends reframing this measure to allow the TAC the flexibility to incorporate the most recent information available. Research is ongoing to identify and test technologies to minimize impacts to avian species. The TAC should be allowed to advise the County using the most relevant visual modifications or audio/visual deterrence methods based upon the most recent information available.
    - ADMM-2: The Service advises caution when considering the use of perch deterrents. Perch deterrents should not be used on electric utility poles, since they often put eagles and other raptors at greater risk of being electrocuted than poles without deterrents. Further, perch deterrents on other structures are often not effective and serve to provide structures for birds' nests. PacifiCorp conducted avian risk assessment surveys of over 120,000 distribution poles from 2001 to 2012 in Utah, Wyoming, Idaho, Oregon, Washington, and California (Liguori 2013). During these surveys, raptor/raven perching was observed two times more frequently on poles with perch deterrents compared to poles without deterrents. Likewise, evidence of raptor use at poles (e.g., pellets, prey remains, whitewash) was 1.3 times greater at poles with perch deterrents compared to poles without deterrents. Perch deterrents poles were also associated with increased electrocution mortality rates (3.6 times greater) and increased raptor/raven nesting on poles (4 times greater). Because of these unintended consequences, the company removed perch deterrents from its avian protection standards. 23

15. Page 3-4-130; ADMM-7: In this section of the document, it is not clear whether the 1.679 fatalities/MW/year is an average for the entire area or on an individual facility basis. In order to ensure that the effects of poorly placed turbines can be minimized, we recommend having a measure that would allow individual turbines to have more restrictive conditions (i.e. higher cut-in speed) if that turbine or turbines are found to have significantly higher fatality rates than others in the facility. 24

E.2.1 Comment Letter FA-1—U.S. Fish and Wildlife Service

Response to Comment FA-1-1

The commenter, the U.S. Fish and Wildlife Service (USFWS), outlines the agency's legal authorities over migratory birds under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) and outlines the current permit rule created for eagles in 2009, noting that the take of eagles associated with the operation of wind turbines can be permitted under this authority. The commenter also notes USFWS's policies regarding preservation of local eagle populations including the establishment of regional thresholds for take—in this case, 5% or less of a local-area population annually. The commenter also notes that USFWS completed a recent analysis for an eagle take permit for a wind project near the APWRA, determined that the current take rate for the APWRA is approximately 12% of the local-area population annually, and remains concerned regarding this level of ongoing take. The County appreciates USFWS's review of the PEIR and its recent efforts to implement a permit program for the lawful take of eagles. While the County does not have the responsibilities that USFWS has under BGEPA, the County has worked diligently for many years to reduce ongoing impacts on eagles as well as other migratory birds. As outlined in the PEIR, the County believes that repowering the APWRA is an effective measure to reduce impacts on eagles as well as migratory birds. Table 3.4-11 on page 3.4-99 and Table 3.4-12 on page 3.4-113 of the Draft PEIR outline the expected reductions of mortality for most avian species, including golden eagles. Additionally, as noted in Master Response 4, additional information is now available regarding the golden eagle fatality rate at the Vasco Wind Project. This information has been incorporated into the Final PEIR, and while the new data slightly changes the projected impacts of repowered projects, the County notes that repowering is still expected to result in a reduction in impacts on most species, including golden eagles. Regardless of this expected reduction, the County has determined that repowering projects would continue to affect golden eagles as well as other migratory birds, concluding that these impacts are significant and unavoidable even after implementation of mitigation measures.

Response to Comment FA-1-2

The commenter notes that, overall, USFWS is supportive of the bird and bat mitigation measures and adaptive management conservation measures outlined in the PEIR. The County appreciates USFWS's review of the PEIR and its recent efforts to implement a permit program for the lawful take of eagles, as well as the recent development of USFWS's *Land-Based Wind Energy Guidelines*.

Response to Comment FA-1-3

Please see Master Response 4, *Estimated Avian Mortality Rates Methodology*, for a response to this comment.

Response to Comment FA-1-4

The commenter notes that eagles will continue to be at risk in the APWRA, and encourages wind operators to follow USFWS's Eagle Conservation Plan (ECP) Guidance and to apply for eagle take permits. Additionally, the commenter notes that repowering alone may not be sufficient to reduce impacts on birds and bats at windfarms and recommends removal of lattice tower turbines, careful siting, and continued collaboration with USFWS. The County concurs with USFWS and acknowledges in the PEIR that eagles will continue to be at risk in the APWRA following repowering. While the

County cannot require applicants to apply for eagle take permits, many of the PEIR mitigation measures were modeled after the avoidance, minimization, and mitigation measures outlined in USFWS's ECP Guidance. Additionally, Mitigation Measure BIO-11h, beginning on page 3.4-107 of the Draft PEIR, presents several mitigation options, including an option for applicants to use a USFWS-approved ECP and Bird and Bat Conservation Strategy (BBCS), for achieving compensatory mitigation requirements. The County believes that including this option may provide incentive for wind operators to apply for eagle take permits. The County is also supportive of USFWS's recommendations to remove lattice tower turbines and implement careful siting of repowered turbines. Mitigation Measure BIO-11c on page 3.4-104 of the Draft PEIR requires the use of turbine designs that reduce avian impacts, such as tubular towers with internal ladders and no external catwalks, railings, or ladders. Lastly, the County is also supportive of USFWS's recommendation to conduct careful siting of repowered turbines to minimize avian impacts and has included Mitigation Measure BIO-11b, on page 3.4-104 of the Draft PEIR and as revised in Response to Comments FA-1-14 and FA-1-15, to require careful siting of turbines using the best available information to reduce avian collision risk.

Response to Comment FA-1-5

As noted in Response to Comment FA-1-4, the County cannot require applicants to apply for eagle take permits; however, the mitigation measures in the PEIR are modeled after USFWS's ECP Guidance, and the County believes the compensatory mitigation measures may provide incentive for applicants to apply for eagle take permits.

Response to Comment FA-1-6

The commenter requests that the County approve an alternative that would limit wind energy development so that ongoing take of golden eagles does not exceed 5% of the local-area golden eagle population. The commenter also notes that, based on the current estimates of take, such an alternative would limit the overall take to less than 29 eagles each year. As noted in Response to Comment FA-1-1, the County believes that repowering the APWRA is an effective measure to reduce impacts on eagles as well as migratory birds. Additionally, as noted in Master Response 4, the County has updated the estimated golden eagle fatality rate at the Vasco Wind Project to include the results of the second year of fatality monitoring, which became available following the publication of the Draft PEIR. The County believes that approximately 158 MW of generation capacity has been constructed or approved in the Contra Costa County portion of the APWRA as of preparation of the Final PEIR. The County concludes that, considering the Contra Costa wind projects in combination with program Alternative 2 (450 MW), the entire Altamont Pass area (that is, the program area as described in the PEIR considered together with the Contra Costa County portion of the APWRA) could ultimately support up to 608 MW of generation capacity. Using the 2-year average fatality rate for golden eagles from the Vasco Wind Project—0.03 eagles/MW/year—the County has determined that approximately 18 eagles/year could be killed with repowering of the entire Altamont Pass area. Although it remains a significant impact, this number is well below USFWS's stated target. While the County is not required to adopt an alternative that limits overall take of golden eagle, the County believes that repowering the program area under either of the proposed alternatives is an effective strategy to reduce impacts on golden eagles. Lastly, the County notes that Mitigation Measure BIO-11h requires each project to compensate for the loss of individual raptors, including golden eagles, through a combination of conservation measures.

Response to Comment FA-1-7

As noted in Response to Comment FA-1-6, the County believes that either of the program alternatives analyzed in the Draft PEIR will reduce impacts on golden eagles to fewer than 29 eagles per year for the entire APWRA. As discussed in that response, using the latest available data from the Vasco Winds project, the anticipated take of eagles for the entire APWRA following complete repowering would be approximately 18 eagles/year.

Response to Comment FA-1-8

The commenter points out that the reference for birds protected under the MBTA is outdated, and provides the correct reference. The description of the Migratory Bird Treaty Act on pages 3.4-1 and 3.4-2 of the Draft PEIR has been revised as shown below.

> The Migratory Bird Treaty Act (MBTA) domestically implements a series of international treaties that provide for migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act further provides that it is unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird…" (16 USC 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA can be found in the ~~March 1, 2010~~November 1, 2013 *Federal Register* (~~75~~78 FR 65844–658649281). This list comprises several hundred species, including essentially all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and of personal property. Take of nongame migratory birds cannot be authorized through the MBTA for the program or Patterson Pass and Golden Hills projects. USFWS publishes a list of birds of conservation concern (BCC) to identify migratory nongame birds that are likely to become candidates for listing under ESA without additional conservation actions. The BCC list is intended to stimulate coordinated and collaborative conservation efforts among federal, state, tribal, and private parties.

Response to Comment FA-1-9

The commenter requests that updated sources of information be incorporated into the *Golden Eagle* species account. The text of that account on pages 3.4-36 and 3.4-37 has been revised as shown below.

> Golden eagle is fully protected under the California Fish and Game Code and is an APWRA focal species. It is also protected by the MBTA, the BGEPA, and several sections of the California Fish and Game Code.
>
> Golden eagle is a year-round resident throughout much of California. The species does not breed in the center of the Central Valley but breeds in much of the rest of the state. Golden eagles typically occur in rolling foothills, mountain areas, sage-juniper flats, and deserts (Zeiner et al. 1990a:142–143). In California, golden eagles nest primarily in open grasslands and oak (*Quercus* spp.) savanna but will also nest in oak woodland and open shrublands. Golden eagles forage in open grassland habitats (Kochert et al. 2002:6). Preferred territory sites include those that have a favorable nest site, a dependable food supply (small to medium ~~to large~~ mammals, including ground squirrels, and birds), and broad expanses of open country for foraging. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats (Johnsgard 1990:262). In the interior central Coast Ranges of California, golden eagles favor open grasslands and oak savanna, with lesser numbers in oak woodland and open shrublands. In the Diablo Range of California, all except a few pairs nest in trees in oak woodland and oak savanna habitats due to a lack of suitable rock outcrops or cliffs. Nest tree species include several oak species (*Quercus* spp.), foothill pine (*Pinus sabianiana* and *P. coulteri*), California bay laurel (*Umbellularia californica*),

eucalyptus (*Eucalyptus* spp.), and western sycamore (*Platanus racemosa*). A few pairs of eagles nest on electrical transmission towers traversing grasslands (Hunt et al. 1999:13).

Suitable nesting and foraging habitat for golden eagle is present in the program area. The APWRA has been reported to contain a higher density of golden eagles than anywhere else in the world (Hunt and Hunt 2006). The Predatory Bird Research Group estimated that at least 70 active golden eagle territories existed within 1920 miles of the program area, based on annual surveys from January 1994 to December 1997 (Hunt et al. 1999). These territories were resurveyed and occupancy verified in 2005 (Hunt and Hunt 2006). The CNDDB includes 18 occurrences of golden eagles within 10 miles of the Project Area. The majority of these records are located to the northwest of the Project Area around Los Vaqueros Reservoir. Nine of the occurrence records documented nesting pairs of golden eagles during at least one breeding season between 2005 and 2008 (California Department of Fish and Wildlife 2013c). The golden eagle population within 19 miles of the APWRA includes seven golden eagle territories/breeding areas within the Los Vaqueros watershed. Nest surveys and monitoring have been conducted within the watershed from 1994 to 2013, and 26 golden eagle nest structures have been documented during this period. Six of the seven breeding areas were occupied by golden eagle pairs during 2013. (California Environmental Services 2014.). Moreover, EBRPD reported three historic and one recent golden eagle nests within the program area and two additional nests within 2 miles of the program area (Barton pers. comm.). There are no CNDDB records of golden eagle nests within the program area; however, there are 10 records of nests within 3.5 miles north and northwest of the program area (California Department of Fish and Wildlife 2013c). In early 2014, ground-based surveys for golden eagles were initiated in an expanded area to collect information on site occupancy and nesting success of the broader population of golden eagles in the Diablo Mountains. This study is a collaborative effort led by the U.S. Geological Survey, with the overall objective being to develop and evaluate survey and monitoring methods for estimating trends in occurrence and nesting success of golden eagles (U.S. Geological Survey 2013). The results of the 2014 surveys have not yet been published.

Golden eagle is unlikely to nest at Patterson Pass because the larger willow trees present are located in a deep ravine and do not offer an open view of the landscape. Suitable nesting habitat for golden eagle may be present in the Golden Hills project area, and golden eagles may forage in either project area. The CNDDB lists no occurrences of golden eagle nests in either project area (California Department of Fish and Wildlife 2013c).

Research of the golden eagle population in the APWRA has revealed it to be stable but with reduced resilience due to turbine-related mortality. Hunt (2002) examined data collected over a 7-year period between 1994 and 2002 that included the monitoring of 60–70 active territories within 30 kilometers (19 miles) of the APWRA. In 2005, these territories were found still to be 100% occupied (Hunt and Hunt 2006). The conclusions of these studies were that the golden eagle population in the APWRA region remains stable (Hunt 2002; Hunt and Hunt 2006). In addition, the studies found no increase in the number of actively breeding subadults, indicating that there are enough floaters to buffer any loss of breeding adults (Hunt 2002; Hunt and Hunt 2006). The conclusion of a stable golden eagle population in the APWRA vicinity was supported by the results of a population dynamics model that used reproduction rates and fatality rates, among other variables (Hunt 2002). However, the model results also suggested that the number of estimated annual fatalities used in the model, 50 individuals, could not be sustained by the number of breeding adults when considering the loss of reproductive potential incurred by each eagle fatality (Hunt and Hunt 2006). Although the vacant territories are filled by floaters and subadults to stabilize the APWRA population, the APWRA vicinity can be considered a population sink because the population demands a flow of recruits from outside the area to fill breeding vacancies as they occur.

Hunt and Hunt (2006) recommended future studies of the APWRA golden eagle populations to better understand long-term trends. The U.S. Geological Survey is currently conducting a population inventory in the APWRA region (U.S. Geological Survey 2013) to build on previous research by expanding surveys of territory occupancy and nesting success to include the broader population of golden eagles in the Diablo Mountains. The objectives of the study are to (1) estimate the breeding and nonbreeding population and measure reproductive success, (2) evaluate golden eagle

detectability based on temporal and survey methodology factors, and (3) recommend strategies for improving golden nesting success and methods to monitor trends (U.S. Geological Survey 2013). This study will help to inform future management of golden eagles in the APWRA and surrounding region.

In response to the comment regarding the data available in the CNDDB, the first paragraph of *Special-Status Species* on page 3.4-24 of the Draft PEIR has been revised as shown below.

Based on the USFWS species list (U.S. Fish and Wildlife Service 2013); CNDDB (California Department of Fish and Wildlife 2013c) records search for the quadrangles overlapping the program area (Altamont, Cedar Mountain, Byron Hot Springs, Clifton Court Forebay, and Midway); and fatality records from APWRA fatality monitoring, 36 special-status wildlife species were identified as having potential to occur in the program area. Of these 35 species, 9 were determined to have low or no potential to occur in the program area and are not discussed further (Table 3.4-5); 26 of the 35 species are known to occur or have a moderate to high likelihood of occurring within the program area because suitable habitat is present (longhorn fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle [*Desmocerus californicus dimorphus*], curved-foot hygrotus diving beetle, California tiger salamander, western spadefoot [*Spea hammondii*], California red-legged frog, foothill yellow-legged frog [*Rana boylii*], western pond turtle, Blainville's [coast] horned lizard, Alameda whipsnake, San Joaquin coachwhip [*Masticophis flagellum ruddocki*], white-tailed kite, northern harrier, Swainson's hawk, golden eagle, western burrowing owl, loggerhead shrike, tricolored blackbird, little brown bat, western red bat, hoary bat, pallid bat, American badger, and San Joaquin kit fox). In addition to these 26 species, three species (bald eagle, Townsend's big-eared bat, and silver-haired bat) were added to this table based on suitable habitat conditions and professional judgment. It should be noted that the CNDDB is a presence-only database that depends on voluntary submission of species location data and is not a complete database of species locations.

Regarding the commenter's request for a summary of eagle behavior/use data and APWRA-specific risk models, the County points out that there are no specific risk models for the APWRA. In response to the commenter's request that reference to the SRC's turbine siting guidelines be added to the document, the second paragraph of *Avian Mortality and Monitoring* on page 3.4-45 of the Draft PEIR has been revised as shown below.

Until recently, attempts to reduce avian fatalities in the APWRA have focused primarily on two management actions: the shutdown of turbines during the winter period when use of the area by red-tailed hawks, golden eagles, and American kestrels is highest, and the removal of turbines determined to pose the highest collision risk based on history of fatalities, topographic position of the turbine, and other factors (Smallwood and Spiegel 2005a, 2005b, 2005c; ICF International 2013). While these actions have met with some success, their effectiveness has been less than ~~predicted~~ expected for reasons that are not yet clear. However, an increasing body of evidence suggests that repowering—in this case the replacement of numerous older, smaller turbines with fewer newer, larger turbines—could result in a substantial reduction in avian fatalities. Using the first few years of data from the Alameda County Avian Fatality Monitoring Program, Smallwood and Karas (2009) concluded that the most effective way to reduce turbine-related avian fatalities in the APWRA is to repower. Evidence collected to date from the three sites in the APWRA that have been repowered suggests that the larger modern turbines cause substantially fewer turbine-related avian fatalities than the older generation turbines (Brown et al. 2013; ICF International 2013), although it should be pointed out that two of the three sites involved had much smaller turbines than those proposed for use in the program. The Scientific Review Committee (SRC) for the APWRA has also produced guidelines for siting wind turbines to reduce avian fatalities in the APWRA. The SRC evaluated topographic, wind pattern, bird behavior, and turbine siting variables related to hazardous conditions to provide guidance to the wind companies to reduce avian collision hazards (Alameda County Scientific Review Committee 2010).

Response to Comment FA-1-10

For a response to this comment, please see Master Response 11, *Bat Impacts and Mitigation.*

Response to Comment FA-1-11

The commenter notes that the County has a responsibility to address impacts on all birds—not just focal species and special-status species. The County notes that Table 3.4-11 on page 3.4-99 and Table 3.4-12 on page 3.4-113 of the Draft PEIR provide estimated numbers of fatalities for all raptors as well as all native non-raptors (i.e., all birds). Additionally, the discussions of native non-raptors on pages 3.4-103 and 3.4-117 discuss the anticipated impacts on native non-raptors as a separate group distinct from raptors and other special-status species. The County also notes that the PEIR finds impacts on native non-raptors significant and unavoidable, even after the implementation of mitigation measures BIO-12a through BIO-12j. Since the PEIR treats native non-raptors as a group, the PEIR does not present potential impacts on native non-raptor species individually.

Response to Comment FA-1-12

The commenter recommends also calculating carcass detection probability using, or at least incorporating, the APWRA Scientific Research Committee's QA/QC Study and other relevant studies conducted recently. Pages 3.4-51 through 3.4-54 of the Draft PEIR outline the avian fatality analysis methods. The methods on those pages essentially note that the County used existing fatality rates from several sources to compare the existing fatality rates to the estimated fatality rates after repowering. The fatality data on which the analysis was based was informed by the carcass detection probability data available for the years in which detection probability was evaluated. The Draft PEIR already uses the best available, already published, and peer-reviewed estimates of fatalities for existing and repowered projects in the APWRA. Please see also Master Response 5, *Avian Fatality Monitoring Methodology*.

Response to Comment FA-1-13

The commenter suggests conducting preconstruction nest surveys within 24 hours of the start of construction activities. Mitigation Measure BIO-8a requires nesting bird surveys within 7 days prior to the start of construction activities because conducting preconstruction nest surveys within 24 hours of construction would not allow sufficient time to coordinate with the wildlife agencies and implement protective measures prior to the start of construction. Because the measure requires coordination with USFWS and CDFW when determining nest buffers, these agencies will be able to recommend larger buffer areas if warranted. The County feels that the measure protects nesting birds, while taking into consideration the factors that inform the nest buffer distance (e.g, existing level of disturbance, biology of the bird, topography, line of sight, type of construction activity). The text of Mitigation Measure BIO-8a has been revised as shown below to include a larger survey area for raptors and the potential for a larger buffer area, if necessary.

Mitigation Measure BIO-8a: Implement measures to avoid and minimize potential impacts on special-status and non–special-status nesting birds

Where suitable habitat is present for raptors within 1 mile (within 2 miles for golden eagles) and for tree/shrub- and ground-nesting migratory birds (non-raptors) within 50~~0~~ feet of proposed work areas, the following measures~~, consistent with measures developed in the EACCS,~~ will be

implemented to ensure that the proposed project does not have a significant impact on nesting special-status and non–special-status birds.

- Remove suitable nesting habitat (shrubs and trees) during the non-breeding season (typically September 1–January 31) for nesting birds.
- To the extent feasible, avoid construction activities in or near suitable or occupied nesting habitat during the breeding season of birds (generally February 1–August 31).
- If construction activities (including vegetation removal, clearing, and grading) will occur during the nesting season for migratory birds, a qualified biologist will conduct preconstruction nesting bird surveys within 7 days prior to construction activities. The construction area and a ~~500-foot~~1-mile buffer will be surveyed for tree-nesting raptors (except for golden eagles), and a 50-foot buffer will be surveyed for all other bird species.
- Surveys to locate eagle nests within 2 miles of construction will be conducted during the breeding season prior to construction. A 1-mile no-disturbance buffer will be implemented for construction activities to protect nesting eagles from disturbance. Through coordination with USFWS, the no-disturbance buffer may be reduced to 0.5 mile if construction activities are not within line-of-sight of the nest.
- If an active nest (other than golden eagle) is identified near a proposed work area and work cannot be conducted outside the nesting season (February 1–August 31), a no-activity zone will be established around the nest by a qualified biologist in coordination with USFWS and/or CDFW. Fencing and/or flagging will be used to delineate the no-activity zone. To minimize the potential to affect the reproductive success of the nesting pair, the extent of the no-activity zone will be based on the distance of the activity to the nest, the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the species, and the dissimilarity of the proposed activity to background activities. The no-activity zone will be large enough to avoid nest abandonment and will be between 50 feet and ~~1,000 feet~~1 mile from the nest, or as otherwise required by USFWS and/or CDFW.

Response to Comments FA-1-14 and FA-1-15

The commenter suggests that surveys for eagle nests should be conducted within 2 miles of any construction activities and recommends a 1-mile no-disturbance buffer from any identified nests. The commenter further recommends that no turbine be sited within 2 miles of an active or alternative golden eagle nest. The text of Mitigation Measure BIO-8a has been revised as shown in Response to Comment FA-1-13. Mitigation Measure BIO-11b has been revised as shown below to incorporate these recommendations.

Mitigation Measure BIO-11b: Site turbines to minimize potential mortality of birds

~~Micro-s~~Siting of turbines—using analyses of landscape features and location-specific bird use and behavior data to identify locations with reduced collision risk—may result in reduced fatalities (Smallwood et al. 2009). All project proponents will conduct a siting process and prepare a siting analysis to select turbine locations to minimize potential impacts on bird and bat species. Proponents will utilize existing data as well as collect new site-specific data as part of the siti~~t~~ng analysis.

Project proponents will utilize currently available guidelines such as the Alameda County SRC guidelines for siting wind turbines (Alameda County SRC 2010) and/or other currently available research or guidelines to conduct siting analysis. Additionally, project proponents will use the results of previous siting efforts to inform the analysis and siting methods as appropriate such that the science of siting continues to be advanced. All project proponents will collect field data that identify or confirm the behavior, utilization, and distribution patterns of affected avian and bat species prior to the installation of turbines.

Project proponents will collect and utilize available existing information, including but not necessarily limited to: siting reports and monitoring data from previously installed projects; published use and abundance studies and reports; and topographic features known to increase collision risk (trees, riparian areas, water bodies, and wetlands).

Project proponents will also collect and utilize additional field data as necessary to inform the siting analysis for golden eagle. As required in Mitigation Measure BIO-8a, surveys will be conducted to locate golden eagle nests within 2 miles of proposed project areas. Siting of turbines within 2 miles of an active or alternative golden eagle nest or active golden eagle territory, will be based on a site-specific analysis of risk based on the estimated eagle territories, conducted in consultation with USFWS.

Project proponents will utilize methods (i.e., computer models) to identify dangerous locations for birds and bats based on site--specific risk factors informed by the information discussed above. The project proponents will compile the results of the ~~micro-~~siting analyses for each turbine and document these in the project-level APP, along with the specific location of each turbine.

Response to Comment FA-1-16

The commenter notes that the avian analysis on page 3.4-98 of the Draft PEIR should consider impacts on all birds, not just focal raptors and rare, special-status species. Please see Response to Comment FA-1-11 and Master Response 7, *Migratory Bird Treaty Act*, for a response to this comment.

Response to Comment FA-1-17

The commenter notes that burrowing owl mortalities at the repowered Diablo Winds project continue to be high and recommends that the County include measures to reduce impacts at that site and other repowered projects. The County notes that because the Diablo Winds project is an existing, already approved and operating project, measures in the PEIR would not apply to that project. For future repowered projects, impacts on burrowing owl are expected to increase slightly as described in the discussion of *Burrowing Owl* on page 3.4-100 of the Draft PEIR. However, as the discussion points out, there is some uncertainty regarding the level of expected impacts: using the Vasco Winds fatality rate produces a significant decrease, using the Diablo Winds fatality rate produces an increase. The County notes that environmental analysis for future repowering projects would be tiered from this PEIR, and would be based on additional monitoring data available at that time, which may provide better estimates of burrowing fatalities. Despite the uncertainties surrounding the burrowing owl impact estimates, the Draft PEIR finds impacts to burrowing owl as significant and unavoidable. Additionally, the County notes that Mitigation Measure BIO-11h on page 3.4-107 of the Draft PEIR requires compensatory mitigation for each individual raptor fatality, which would include burrowing owl.

Response to Comment FA-1-18

The County concurs with the commenter's recommendation that boulder piles be at least 500 meters (1,640 feet) from turbines. The second bullet of Mitigation Measure BIO-11f on page 3.4-106 of the Draft PEIR has been revised as shown below.

- Boulders (rocks more than 12 inches in diameter) excavated during project construction may be placed in aboveground piles in the project area so long as they are more than ~~200~~ 500 ~~yards~~ meters (~~656~~ 1,640 feet) from any turbine. Existing rock piles created during construction of first- and second-generation turbines will also be moved at least ~~200~~ 500 ~~yards~~ meters (1,640 feet) from turbines.

Response to Comment FA-1-19

For a response to this comment, please see Master Response 6, *Technical Advisory Committee*.

Response to Comment FA-1-20

The commenter notes that USFWS is supportive of the suite of conservation measures under Mitigation Measure BIO-11h and requests that the PEIR include a citation for their ECP Guidance whenever the guidance is mentioned in the document. The County appreciates USFWS's support of the conservation measures in the PEIR. The Final PEIR includes the correct reference to USFWS's ECP Guidelines when it occurs in the document (U.S. Fish and Wildlife Service. 2013. *Eagle Conservation Plan Guidance Module 1—Land-Based Wind Energy*. Version 2. April. Division of Migratory Bird Management. Available: http://www.fws.gov/windenergy/eagle_guidance.html. Last updated: June 27, 2014.)

Response to Comment FA-1-21

The commenter notes that the amount of raptor mitigation required in the Draft PEIR is based on the Vasco Winds project first-year mortality results and that these data underestimate ongoing impacts. The commenter recommends that the County update the FEIR to include data from the second year of monitoring at the Vasco Winds project. Lastly, the commenter recommends that compensatory mitigation be recalculated each year. The County understands that the second year of monitoring at the Vasco Winds project has been completed and that a report is expected in August 2014; however, at the time that responses to comments were prepared, the report was not yet available. Additional information from NextEra Energy Resources, the operator of the Vasco Winds project, regarding golden eagle and bat fatalities recorded during the second year, was received by the County during the public comment period and has been incorporated into the FEIR as outlined in Master Response 4.

Response to Comment FA-1-22

For a response to this comment, please see Master Response 6, *Technical Advisory Committee*.

Response to Comment FA-1-23

For a response to this comment, please see Master Response 10, *Adaptive Management*.

Response to Comment FA-1-24

For a response to this comment, please see Master Response 11, *Bat Impacts and Mitigation*.

E.3 State Agencies

SA-1—California Department of Transportation

Jul 21 2014 3:08PM HP LASERJET FAX p.1

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P.O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-6053
FAX (510) 286-5559
TTY 711
www.dot.ca.gov

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July 21, 2014

ALA580854
ALA-580-0.092-8.0
SCH #2010082063

Ms. Sandra Rivera
County of Alameda
224 W. Winton Avenue, Suite 110
Hayward, CA 94544

Dear Ms. Rivera:

Altamont Pass Wind Resource Area Repowering; Golden Hills Project; Patterson Pass Project – Draft EIR

Thank you for continuing to include the California Department of Transportation (Caltrans) in the environmental review process for above named project. The following comments are based on the Draft Environmental Impact Report (DEIR) we received on June 6, 2014.

Transportation Management Plan 1
If it is determined that traffic restrictions and detours are needed on or affecting State highways, a Transportation Management Plan (TMP) or construction Traffic Impact Study may be required of the developer for approval by Caltrans prior to construction. TMPs must be prepared in accordance with California *Manual on Uniform Traffic Control Devices*. Further information is available for download at the following web address:
http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/pdf/camutcd2012/Part6.pdf.

Please ensure that such plans are also prepared in accordance with the transportation management plan requirements of the corresponding jurisdictions. For further TMP assistance, please contact the Office of Traffic Management Plans at (510) 286-4647.

Encroachment Permit 2
Please be advised that any work or traffic control that encroaches onto the State right of way (ROW) requires an encroachment permit that is issued by Caltrans. To apply, a completed encroachment permit application, environmental documentation, and five (5) sets of plans clearly indicating State

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

SA-1—California Department of Transportation

ROW must be submitted to the address below. David Salladay, District Office Chief, Office of Permits, California Department of Transportation, District 4, P.O. Box 23660, Oakland, CA 94623-0660. Traffic-related mitigation measures should be incorporated into the construction plans prior to the encroachment permit process. See the following website for more information: http://www.dot.ca.gov/hq/traffops/developserv/permits/ 2 cont.

Please feel free to call or email Luis Meléndez of my staff at (510) 286-5606 or Luis_Melendez@dot.ca.gov with any questions regarding this letter, as for any other assistance we may provide.

Sincerely,

ERIK ALM, AICP
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

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

E.3.1 Comment Letter SA-1—California Department of Transportation

Response to Comment SA-1-1

Caltrans notes its requirements for traffic studies where construction traffic may affect state highways. No response is required in the Final PEIR.

Response to Comment SA-1-2

Caltrans notes its requirements for encroachment permits for state highways. No response is required in the Final PEIR.

E.4 Local Agencies

LA-1—East Bay Regional Park District

2950 PERALTA OAKS COURT • P.O. BOX 5381 • OAKLAND • CA • 94605-0381
T. 1 888 EBPARKS F. 510 569 4319 TDD. 510 633 0460 WWW.EBPARKS.ORG

July 21, 2014

Sandra Rivera
Assistant Planning Director
224 W. Winton, Room 111
Hayward, CA 94544

Sent Via E-Mail to:
Sandra.Rivera@acgov.org
July 21, 2014

RE: BRUSHY PEAK REGIONAL PRESERVE: ALTAMONT PASS WIND RESOURCE AREA REPOWERING DRAFT PROGRAM EIR (DRAFT PEIR)

Dear Ms. Rivera,

East Bay Regional Park District ("District") is responding to the Notice of Availability (NOA) for the Altamont Pass Wind Resource Area (APWRA) Draft PEIR. The District owns or manages nearly 110,000 acres of open space in Alameda and Contra Costa Counties. This includes more than 3,000 acres of parklands in Contra Costa County that have wind turbine leases. Within Alameda County, wind turbines abut the northern and eastern boundaries of Brushy Peak Regional Preserve ("Brushy Peak"). Our Master Plan also identifies a future park at Tesla located near the southeastern boundary of the proposed Program area. We previously submitted scoping comments on this project on October 4, 2010.

The Program would set the stage to nearly double the size of the existing wind resource area and extend entitlements to operate wind turbines for up to 30 years. It will result in a number of significant adverse impacts to Brushy Peak and sensitive resources in the vicinity. The Program may also impact the future park at Tesla. These include impacts to aesthetics, agriculture, biological resources, cultural resources, hazards & hazardous materials, hydrology and water quality, land use and planning and public services. We are particularly concerned that the Program takes a blanket approach to resource evaluation and does not recognize or distinguish between areas of well documented sensitive biological, cultural and aesthetic resources versus lower quality resource areas where windfarms would have more benign impacts.

We believe that the Draft PEIR is seriously flawed because its analysis is based on an improper environmental baseline and it overlooks or inadequately considers significant effects, leaving unmitigated impacts over the 30 year term of the Program. Our detailed comments pursuant CEQA are attached. Please call me at (510) 544-2627 should you have any questions regarding our letter.

Sincerely,

Chris Barton
Acting Environmental Programs Manager

LA-1—East Bay Regional Park District

East Bay Regional Park District Comments

Altamont Pass Wind Resource Area Repowering
Draft Program Environmental Impact Report (Draft PEIR)
July 21, 2014

- Program Description, Environmental Setting & Baseline – The Draft PEIR (and Program title) frames the Program as "Repowering" which improperly leads the reader to believe the Program would merely reactivate or continue an existing use. Where, in fact, the Program is an entirely new project under CEQA without any land use entitlement ties to old windfarms. How a project is framed for evaluating impacts is important because reactivation or "Repowering" of an existing use may seem benign and inadvertently cause potentially affected parties to not review the details of the Draft PEIR and proposed Program. The Program would set the stage to nearly double the size of the existing wind resource area and extend entitlements to operate wind turbines for up to 30 years. The Draft PEIR's program description, environmental setting and baseline are misleading. This fundamentally flaws analysis throughout the Draft PEIR for the following reasons: 1
  - The program description says the project is "permitted" by County plans and zoning but then says windfarms are conditionally permitted uses (Draft PEIR, p ES-3). The Draft PEIR should be revised to clearly explain that the Program is not permitted by right and can be denied by the County under adopted General Plan and zoning regulations. 2
  - CEQA Guidelines state that the existing physical conditions in the vicinity of a project "will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant"; and, EIRs should provide a realistic evaluation of the effects of a project - not overstating and not understating the impacts. The Draft PEIR's use of existing physical conditions, continued operation of old turbines, mischaracterizes impacts because "normal" circumstances clearly do not apply. Windfarm entitlements to operate expire in 2015 and 2018 with no express or implied right to continue operating (County Resolutions Z-13-36, R-2007-111). The Draft PEIR analysis assumes that in the absence of the Program, existing facilities will continue to operate indefinitely when in fact without land use entitlements, operations would foreseeably cease and reclamation plans would be implemented. 3
  - Expiration of the permit to operate and conditions requiring reclamation are unique to windfarms because of their single use utility and the ephemeral nature of alternative energy technology advancements. This is in comparison to a development where a structure can be repurposed even long after the original use is abandoned. The County's linking reclamation of old turbines to approval of future land use entitlements and CEQA clearance presents a conflict of interest and is improper.
  - The Draft PEIR Program Description should explain how the "modified boundary" was determined and is protective of well documented sensitive resources. For the program area, it appears the County used the revised boundary of the APWRA as defined by the incomplete APWRA NCCP/HCP process to expand the APWRA in Alameda County from 36,870 acres to 43,358 acres. This expansion cannot be considered to have undergone sufficient public and environmental review. It also goes against the stated goal of the East County Area Plan to maximize the production of wind generated energy 4

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"within the limits of environmental constraints" (Policy 169, p. 3.1-4.), since environmental constraints were not used to evaluate the expansion. The Draft PEIR needs to be revised to include a CEQA-level review of the consequences of the expansion of the area of the APWRA or it needs to retain the original boundary of the APWRA. Many windfarm related impacts may be avoided if they are sited away from sensitive resource areas such as Brushy Regional Preserve, the future Tesla Regional preserve, and areas surrounding these properties. Additionally, we are concerned that the County's rationale for the modified boundary is based on wind speed and zoning with no attempt to direct windfarms away from areas where they will be detrimental to sensitive resources. Would the County take the same approach and reference a few General Plan policies to justify providing programmatic CEQA coverage to allow landfills everywhere that zoning conditionally allows it? This approach to land use planning is a troubling precedent to set and should be reconsidered. 4 cont.

- The Draft PEIR should provide a chronology of changed circumstances since the County started approving windfarms in 1980. This information is essential to help us understand and evaluate the context of potential impacts over the proposed 30 year program period. The chronology should include: 5
  - Descriptions of the changes to the regulatory environment – For example, which species have been listed since 1980 & could be listed or go extinct over the term of the Program?
  - Resource protection/open space environment – What changes have occurred to protect sensitive species habitat and open space? For example, Brushy Peak Regional Preserve and other public & private open spaces and easements have come online to protect species. Windfarms should not reverse the progress toward protecting & contributing toward the recovery of species that use these lands.
  - Discovery of cultural resources – What discoveries have been made since 1980, especially those considered rare or sacred?
  - Understanding of avian and bat impact avoidance – How and why has wind turbine design improved over the years to reduce avian and bat mortality?
  - Effectiveness of laws, regulations and conditions of approval intended to protect species - Has there been any enforcement action for violations of the law?
  - Alternative energy advancements – Technology and economics could affect long term viability of windfarms. What is the outlook of windfarm technology versus other emerging alternative energy resources such as natural gas, solar, geothermal, wave, hydro, biomass, radiant.

- Aesthetics - Because of the intrinsic value of unobstructed views from public open spaces, any aspect of the Program that will degrade views from Brushy Peak and Tesla should be avoided. The Draft PEIR references the intent of General Plan Policy 105 to protect ridges neighboring Brushy Peak and Tesla from the visual intrusion of turbines but the proposed Program leaves the door open for development to occur. To retain the recreational experience of our users, views of ridges should be protected from open space areas, not just County Road. We believe this is consistent with the intent of Policy 105. The Program should be modified to take an affirmative position to protect ridges around these parks by outright prohibiting development at these locations. Closing this loophole in the Program will help windfarm developers plan around this sensitive resource and avoid costly public 6

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LA-1—East Bay Regional Park District

review and debate in future planning processes. The Draft PEIR should be updated to include maps showing where turbine development is prohibited for view shed protection. 6 cont.

Mitigation Measure AES-2a will increase visual impacts, not avoid or minimize them. Any mitigation measure taking a "site development review" approach should include clear performance standards that prohibit turbine or support facilities from being constructed in areas visible from public open spaces. The Draft PEIR's Aesthetics impact analysis should be reevaluated to apply a proper environmental baseline that assumes existing turbines are reclaimed. 7

The Draft PEIR does not adequately evaluate the cumulative visual impacts for build out of the Program area with windfarms. This analysis should include and address the cumulative visual effects of the three Contra Costa County repowering projects (i.e. Buena Vista, Tres Vaqueros and Vasco Winds). 8

- Agriculture – The Draft PEIR states that project proponents promise to strictly control access to its farms under the Program (Draft PEIR p. 3.8-9) to avoid and minimize death and injury of people within ½ mile of the turbines. The Draft PEIR, also, concludes that the Program will have a less than significant impact on agricultural resources. How can ranching remain viable if access is prohibited or if access is allowed there is the threat of death or injury? The Draft PEIR should address this potential impact and the Program should be designed to avoid it. 9

- Biological Resources – The Draft PEIR does not adequately analyze effects on biological resources and mitigation strategies. The District's comments pertaining to the Draft PEIR's coverage of Biological Resources are presented in **Attachment A**, the main points of which may be summarized as follows:

    - The consequence of the expansion of the APWRA program boundaries, based on an incomplete NCCP/HCP process, was not subject to sufficient environmental and public review. 10
    - Setting the current (non-repowered) annual avian fatality rates in the APWRA as the threshold of significance at which mitigation measures will be implemented is unacceptable and ignores the fact that annual avian fatality rates lower than the proposed thresholds may still likely be significant for many species, e.g. golden eagle. 11
    - The discussion of biases in avian fatality rate estimates needs to be expanded to include more than just detection probability. 12
    - The calculation of the APWRA non-repowered annual avian fatality rates are based on a report that had data problems that have since been corrected in a new report, so the non-repowered APWRA annual avian fatality rates need to be recalculated. The estimated annual avian fatality rates for the program area are based on monitoring results from two wind farms with wind turbines that are substantially smaller (e.g. 750 kW and 1 MW) than the proposed repowered turbines (e.g. 1.6 to 3 MW) and one wind farm that has comparable wind turbines (2.3 MW) but only 13

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one year of fatality monitoring, thus more variability needs to be built into the threshold analyses. 13 cont.

- Avian fatality rates are presented for the four focal species and a few others; this needs to be expanded to include the full suite of avian species affected, including passerines. 14
- The APWRA has significant, sensitive biological resources that need to be avoided when planning and siting individual projects. For example, we present evidence that Brushy Peak is a major concentration point for golden eagles in the APWRA and so should be avoided. 15
- The process of micro-siting, whereby wind turbine siting plans are compared to avian risk maps, needs to be more open to outside review during both the preconstruction planning and post-construction verification phases. 16
- The Avian Protection Plans, both programmatic and project specific, need to be provided for proper review. 17
- Additional mammal species need to be covered by the EIR, and the bat fatality rates need to be calculated on a per MW-year basis. 18 19

- Cultural Resources - The northern portion of the Brushy Peak is closed to public access and there is ongoing monitoring and police enforcement to protect sensitive cultural artifacts in the area. It is very likely that similar or higher valued sacred cultural artifacts occur on adjacent properties where the Program will allow turbines, related facilities and maintenance workers. The Draft PEIR recognizes high value cultural resources in and around Brushy Peak but is inadequate because it does not acknowledge or respect the rareness of these resources in its impact analysis or mitigation measures. If people are not allowed in sacred areas of Brushy Peak, why does the Program propose to open the door to construct ~400+' tall turbines, access roads and ongoing maintenance in adjacent areas with similar Native American cultural value? 20

  Program level analysis and mitigation measures should steer impacts away from highly constrained area, not lump areas together as if they are of equal value with no consideration of known differences in resource value. We do not believe that Mitigation Measure CUL-1a: Avoid historic resource, will reduce these impacts to "Less than Significant". Siting repowered wind turbines under program Alternative 1: 417 MW and program Alternative 2: 450 MW in close proximity to Brushy Peak Archaeological District will result in Impact CUL-1a-1 and Cul-1a-2, e.g., cause a substantial adverse change in the significance of a historical resource, especially to Native Americans.

  In addition, in reference to p. 3.5-6: Land ownership attributed to Brushy Peak Archaeological District (Resource Number P-01011111 and P-01-011114; Table 3.5-1). The Program should be modified or mitigation measures adopted to prohibit windfarm activities at properties surrounding Brushy peak. The Draft PEIR mentions that Brushy Peak Archaeological District is adjacent to the program area and assigns it to properties owned by the EBRPD. However, the Draft PEIR fails to include portions of P-01011111 and P-01-011114 that occur on land owned and managed by the Livermore Area Recreation and Park District. This should be corrected.

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- Hazards and Hazardous Materials – The Draft PEIR does not provide sufficient information or analysis on how hikers, bicyclists, equestrians or ranch operators may be impacted by "blade throw". It suggests that this phenomena may cause death or injury to anyone within ½ mile of a turbine but qualifies that the County's buffer guidelines are not based on conclusive data (Draft PEIR p. 3.8-26). The analysis should take into consideration that trespass is a common existing condition in open space areas adjacent residential areas and that ranchers and utility workers may come within ½ mile of a turbine. The Draft PEIR analysis is flawed because it relies on describing relative risk compared to existing turbines rather than the actual risk of the turbines being proposed. Even using the flawed environmental baseline as a point of analysis, there is no evidence to support the Draft PEIR's conclusion that this impact is less than significant. The Draft PEIR should work out a proper assessment of risk from "blade throw" and buffers to safely allow regional trail connections identified by our Master Plan – "Brushy Peak to Del Valle", "San Joaquin County to Shadow Cliffs", "Brushy Peak to Bethany Reservoir" and "Vasco Caves to Brushy Peak." 21

The Draft PEIR evaluation of wild land fire and hazardous materials spill risk is inadequate because the environmental baseline assumes existing turbines will remain in operation. The Draft PEIR should analyze wildfire and hazardous material spill potential from the new turbines and develop mitigation measures to avoid and minimize this potential impact. One would assume that due to the extreme size difference between new versus old turbines that additional hazardous material transport and storage (lubricants in gearboxes?) would be needed. The Draft PEIR should answer this question so we can better understand and evaluate the spill hazard. 22

The Draft PEIR does not adequately analyze how the height of turbines and expansion of the Program area may pose a hazard to aerial firefighting. Helicopters and planes are commonly used to control wildfire on open grasslands in the Program area. The Draft PEIR should analyze if the new turbines will pose a risk to firefighting personnel and impair their ability to fight wildfires (and increase the risk to life and property) if aircraft cannot be used to fight fires due to hazards posed by turbines. 23

- Hydrology and Water Quality – As required by previous use permit conditions, operators of old windfarms should remove unneeded roads and associated drainage facilities. Some of the roads are in poor condition; some are highly erosive, causing substantial downslope sedimentation in wetlands and riparian areas, impacting the species that depend upon these habitats, including tiger salamander, red-legged frog and fairy shrimp. Abandoned roads should be recontoured and restored with native perennial grasses. The restoration will need maintenance and monitoring for several years until successfully established. The operators should be required to create an endowment, a management and monitoring plan, establish specific restoration objectives, conduct proposed improvements, and provided for long-term maintenance and monitoring of reclaimed road areas. 24

New access roads should be designed to minimize the potential for slope failure and erosion. Drainage should be contained and discharged in a manner that does not concentrate flows that scour hillsides or deposit sediments and other pollutants into wetlands and drainages. A portion of the project area drains into the Preserve. To prevent

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new roads from falling into degraded conditions, a mitigation measure should be adopted for the County to evaluate erosion and sedimentation along roadways and drainages as part of routine inspection of windfarm areas. Operators should provide financial assurances so repairs can be made in a timely manner. 24 cont.

- Land Use and Planning – The Draft PEIR does not adequately analyze or address the Project's apparent conflict with Federal and State regulations adopted for the purpose of avoiding or mitigating environmental effects to migratory birds (Migratory Bird Treaty Act) and Golden and Bald Eagles (Bald and Golden Eagle Protection Act). The Draft PEIR is flawed because it assumes that reduce death compared to existing conditions is acceptable where under the law "no take" is the standard. The Draft PEIR should provide sufficient analysis and meaningful discussion to inform the public debate on the following key issues: 25
  - What is the legal framework that allows a public agency to approve land use entitlements for projects that violate these regulations?
  - Disclose efforts, if any, to invoke criminal penalties for violation of the regulations.

The proposed Program conflicts with County General Plan Policy 133 (County shall require that the impacts of wind turbine operations on bird populations are minimized) because it ignores well known data that Brushy Peak and ridges surrounding Brushy peak are a magnet for Golden Eagles. To avoid misguiding future windfarm proposals, the Program should be modified to affirmatively steer development away from highly constrained areas like these. To effectively implement General Plan Policy 133, the County should consider amending its General Plan land use map and Zoning designation to not allow windfarms in sensitive areas like these. 26

The Draft PEIR overlooks the Program's potential land use conflict with the District's Master Planned Trails (Draft PEIR p. 3.14-2) - Brushy Peak to Del Vale, San Joaquin to Shadow Cliffs, Brushy Peak to Bethany Reservoir, Vasco Caves to Brushy Peak. Analysis in the Hazards section of the Draft PEIR suggest that trails going through the Program area will need buffers from turbines. Mitigation measures should be adopted to ensure that trail alignments are accounted for in the placement of turbines and adequate safety buffers are maintained. 27

- Public Services – Windfarms and their support facilities are targets for theft and vandalism which require an increased level of police work versus historic ranch use. This is a potentially significant impact that should be addressed in the Draft PEIR. Under current conditions, existing windfarms would be reclaimed and presumably brought back to dedicated ranching operations. The project would double the life of windfarm operations and nearly double the size of the program area. This should be accounted for in evaluating how the project will impact police services. 28

The height of new turbines could foreseeably change the way local and State firefighting crews respond to wildfires since aircraft may not be safely deployed. The Draft PEIR should evaluate if this will impact firefighting resources. Also related to aircraft and the height of the turbines, the Draft PEIR should address if emergency response times will be reduced if 29

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medevac helicopters cannot be utilized for emergency situations (e.g. worker injury, "blade throw" incidents). 29 cont.

- Alternatives Analysis – The Alternatives analysis is flawed because it assumes the environmental baseline is that existing turbines will continue to operate even though use permits clearly state that there is no express or implied right to continue operating past defined expiration dates. This not only makes the "No Pr oject" analysis meaningless but also carries over to flaw every alternative considered in the Draft PEIR. The Draft PEIR's "No Repowering, Full Decommissioning" is the proper environmental baseline and "No Project" alternative from which impacts should be measured. 30

  The Draft PEIR should include an alternative that excludes locations of high raptor use, visibility from public open spaces and have a high potential for the presence of sacred cultural resources (such as Brushy Peak and vicinity) from the Program area. The alternative should also include implementing General Plan Policy 133 by amending the County's General Plan land use map and zoning designations to not allow windfarms in sensitive areas. 31

- Other – Technological advancements and market forces could foreseeably make windfarms obsolete before the end of the 30 year Program. Derelict windfarms are a blight to the community and present significant health & safety risks to the public, an ongoing code enforcement problem and severe water quality, erosion and sedimentation issues. These potential impacts are not identified or addressed in the Draft PEIR. Mitigation measures should be developed that would require windfarm operators to develop a reclamation plan for review and approval by the County and submittal of financial assurances to cover the cost to implement the approved reclamation plan prior to the issuance of a grading permit. 32

- References – See Attachment A.

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Attachment A

East Bay Regional Park District Comments
July 21, 2014

Altamont Pass Wind Resource Area Repowering
Draft Program Environmental Impact Report (Draft PEIR)

Chapter 3 Impact Analysis
3.4 Biological Resources

p. 3.4-2. Migratory Bird Treaty Act - Take of migratory birds. Should state that the Migratory Bird Treaty Act cannot authorize the take of migratory birds by the program and projects covered in the Draft PEIR. 33

p. 3.4-2 The Bald and Golden Eagle Protection Act - Take of golden and bald eagles. A programmatic eagle take permit was issued by the USF&WS on June 26, 2014. (http://www.fws.gov/cno/conservation/migratorybirds.html). The entities repowering the APWRA should seek an eagle take permit to adequately address mitigation and compensation for the unavoidable take of eagles during the life of the CUP, e.g. through a FONSI: http://www.fws.gov/cno/conservation/MigratoryBirds/ShiloIV-FONSI/ShilohIV-EaglePermit-FONSI-June2014.pdf. 34

p. 3.4-4. Take of fully protected species. Should state that CDFW cannot issue take permits under sections 3511, 3513, and 4700 of the Fish & Game Code for the unavoidable take of migratory birds and bats by the program and projects covered in the Draft PEIR. 35

p. 3.4-5. Protection of birds and raptors. The Draft PEIR should state that CDFW cannot issue take permits under section 3503 of the Fish & Game Code for the unavoidable take of birds and raptors by the program and projects covered in the Draft PEIR. 36

p. 3.4-6. East Alameda County Conservation Strategy (EACCS). Although wind energy projects are covered under the EACCS, the programmatic BO for the EACCS does not cover avian and bat effects caused by wind energy projects and cannot provide incidental take authorization. Therefore, the EACCS does not offer mitigation strategies for the unavoidable take of migratory birds and bats. 37

p.3.4-7. 2007 Settlement Agreement. 38

- The Draft PEIR states "As an alternative to the NCCP called for in the Settlement Agreement, the County has developed a draft *Avian Protection Program* (APP) to provide a framework and process for wind energy projects to comply with applicable statutes (e.g., MBTA and BGEPA) through the repowering process." This statement is misleading because repowered wind projects cannot comply with the MBTA due to unavoidable take of migratory birds.
- The Draft PEIR also states "The key provisions of the APP have been incorporated into this PEIR as impacts and mitigation measures." It would be useful if the County could

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provide copies of the draft APP and list it in the references to enable comparison with the PEIR. 38 cont.

p. 3.4-20. Special Status Species. Should retitle this section to include non-special status species such as red-tailed hawk, prairie falcon, etc. 39

p. 3.4-21. Large flowered Fiddleneck. Should update this account with the latest occurrence data from Lawrence Livermore National Lab rare plant reports. 40

p. 3.4-25. Longhorn Fairy Shrimp. Rock-based vernal pools located in sandstone outcrops represent potential habitat for this species. The Draft PEIR should state whether this habitat occurs in the Golden Hills or Patterson Pass Wind project areas. It certainly occurs throughout the program area. 41

p. 3.4-43. Mammals. The Draft PEIR does not address the San Joaquin Pocket Mouse (*Perognathus inornatus inornatus*) and San Francisco Dusky-footed woodrat (*Neotoma fuscipes annectans*), both California Dept. Fish & Wildlife Species of Special Concern (California Department of Fish and Wildlife 2011), which occur in the APWRA. It also does not address the San Joaquin Kangaroo Rat (*Didpidomys heermanni tularensis*). Kangaroo rats are key prey species of the San Joaquin kit fox. All of these species need to be covered in the Draft PEIR. 42

p. 3.4-35. Swainson's hawk. There is at least one new record of Swainson's hawk nesting in the program area (EBRPD data). 43

p. 3.4-35. Red-tailed hawk. The Draft PEIR states that "this species is primarily a sit-and wait predator…". Flight behavior of the red-tailed hawk and other species in the APWRA has been well documented and should be expanded upon for the purpose of assessing impacts. For instance, red-tailed hawks engage in hovering and kiting flight behavior that places them at high risk of turbine blade strikes (Smallwood et al. 2008). 44

p. 3.4-36 Golden Eagle. Draft PEIR should note that prey of the golden eagle includes small mammals such as California ground squirrel. Draft PEIR should also note that there are at least three historic and one recent record of golden eagle nests within the APWRA (EBRPD, unpubl. data). In addition, suitable nesting habitat may be present in the Golden Hills and Patterson Pass project areas if these project sites have at least one or more eucalyptus trees present. 45

p. 3.4-37. Prairie falcon. Draft PEIR mislabels this species as a "APWRA focal species". Suggest relabeling as "a species of local conservation concern in the APWRA". There are at least four recent, known nest sites located within the (two county) APWRA and at least two more nest sites located within 2 miles of the program area (EBRPD data). In addition, radiotelemery data on prairie falcons indicates extensive use of the APRWA by falcons nesting more than ten miles from the program area (EBRPD unpublished data, see Figure 1 below). 46

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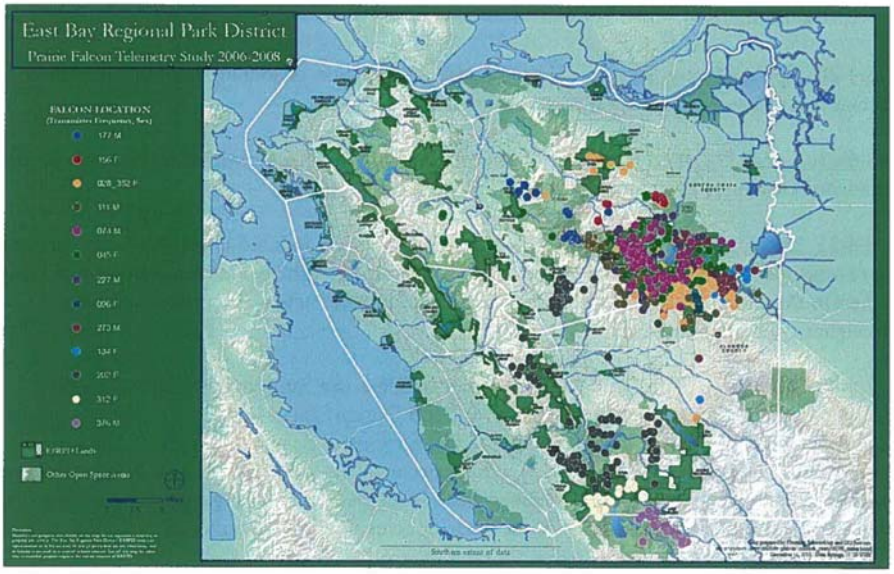

46 cont.

Figure 1. Prairie falcon radiotelemetry locations, 2006-2008. Locations for individual prairie falcons indicated by different colors (N = 13 falcons). Note extensive overlap and use of the northern APWRA by up to six different falcons. Falcons nesting up to 10 miles away from the APWRA still use it.

p. 3.4-45. Avian Mortality and Monitoring. 47

- Should expand discussion to include all species of birds (other raptors and non-raptors) that are taken by wind farm operations in the APWRA. Nearly all EIRs, gray reports and the scientific papers produced on mortality rates in the APWRA have addressed the entire suite of avian and bat species affected by wind operations, e.g. see Smallwood 2007, 2013a, Smallwood and Thelander, 2004, Smallwood and Karas 2008, Smallwood et al. 2008, Smallwood et al. 2010).
- We agree that the most effective way to reduce avian mortality, aside from Alternative 4.2.2 No Repowering, Full Decommissioning (p. 4-23); is to repower the APWRA, however, repowering is fraught with many unknowns. Larger, fewer wind turbines may not be a blanket panacea. For example, Loss et al (2013) found increasing avian mortality with increasing turbine hub height in a comparison of wind facilities across the United States. The Draft PEIR presents evidence that fatalities have been reduced at three repowered projects in the APWRA, Diablo Winds, Buena Vista and Vasco Winds. For the latter, information is presented from the first year of fatality monitoring of the 2.3 MW turbines (the second year avian and bat fatality monitoring report is not yet available for review). This comparison, while based on the most recent available science (Brown et al. 2013), is decidedly premature and should be noted as such. Ultimately, repowering of the APWRA needs to be done with the best available science and rigorous independent review of the wind turbine siting plans. We cannot afford to 48

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repeat the same environmental mistakes over the next 30 years that were made over the previous 30 years. 48 cont.

p. 3.4-46 Bat Fatality and Monitoring. We are truly in the dark regarding bat fatality estimates and assessing impacts to bat populations from wind operations in the APWRA. But the Draft PEIR should present, in addition to raw bat fatalities in Table 3.4-6, adjusted mortality rates based, as per Smallwood and Karas (2008) or Smallwood (2013), for example, to allow comparison with studies on bat mortality rates elsewhere. 49

p. 3.4-51 to 54. Avian Fatality Rate Analysis Methods.

- Draft PEIR state should reference reports that provide estimates based on number of birds killed per turbine per year. 50
- Draft PEIR states that "a larger number of 1 MW turbines than 2.3 MW turbines cannot be installed in a given space…a given project…might support a roughly equivalent number of 1 MW or 2.3 MW turbines". This statement is inaccurate. The Buena Vista project has 1 MW turbines installed in tight strings along ridge lines in a density that could not be achieved with 2.3 MW turbines, e.g. compare with Vasco Winds 2.3 MW turbines. 51
- The Draft PEIR relies on fatality rates in its analysis calculated from the 2005-2011 bird years as presented by the Alameda County Avian Fatality Monitoring Program and compiled in the ICF International (2013) report. The latter was subject to numerous technical difficulties including data control Leslie (2013) and study design (Smallwood 2013b). New annual fatality rates should be calculated using the revised data base as per ICF International (2014). 52
- As noted above, Draft PEIR uses fatality data from three repowered wind projects in the APWRA, Diablo Winds, Buena Vista and Vasco Winds, to estimate fatalities expected from the repowering program and from the covered repowering projects. The Draft PEIR does not present adequate discussion of the study design and methods underlying the monitoring studies from the three repowering projects, so the reader is unable to formulate an informed opinion about the veracity of the projected avian fatality estimates. Fatality estimates derived from the Vasco Winds project are based on a single year of monitoring which is problematic given the extreme year-to-year variability in fatality rates (Smallwood 2013b). 53
- The Discussion of potential biases in the avian fatality analysis methods is incomplete. The Draft PERI should address searcher interval, scavenger and crippling biases (e.g. Smallwood 2007, 2013a). 54

p. 3.4-53, Table 3.4-10. Table presents projected fatality rates of non-repowered and repowered turbines. 95% confidence intervals are not included, annual adjusted fatality rates should be estimated out to 3 decimal places, as per most other reports (e.g. ICF international 2014). Fatality rates for entire suite of affected avian species should be presented. 55

p. 3.4-54. Bat Fatality Analysis Methods. See comments under p. 3.4-46

p. 3.4-55. Determination of Significance. The Draft PEIR sets the level of significance for avian mortality by comparing the *projected* fatality rate to the *baseline* (nonrepowered) fatality rate 56

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derived from existing conditions. The Draft PEIR states "Where the projected rate would exceed the baseline rate, the impact would be significant; if the projected rate is below the baseline rate, the impact would be considered less than significant." We contend that setting the existing APWRA (nonrepowered) fatality rates as the determinant of significant effects is erroneous, because 1) fatality rates far below the current APWRA fatality rates may still represent a significant impact to a given species and 2) the current APWRA fatality rates are out of compliance with the conditions of the 2007 and 2010 Settlement Agreements (ICF International 2014) . The baseline condition for measuring significant impacts and triggering adaptive management should be reconsidered after consultation with the APWRA SRC and others. It may be that the baseline condition that pertains to the "No Repowering, Full Decommissioning" alternative is the proper starting point for this CEQA analysis. The Draft PEIR should acknowledge that post-repowering fatality rates, even if they are lower than the "baseline" nonrepowered levels listed in Table 3.4-11, may still have a significant impact on a given species, and that adaptive management may require additional mitigation in response to new information on effects on local populations, e.g. golden eagles. 56 cont.

p. 3.4-98 to 112. Impact Bio-11a-1.

- p. 3.4-99. Table 3.4-11. We believe the average annual fatalities presented in this table are based on data that required vetting (Leslie 2013), and thus, new baseline fatality estimates should be calculated. For example, whereas the Table 3.4-11 estimates a baseline annual fatality rate for golden eagle at 26.6 individuals, ICF International (2014) presents 3-year rolling average fatality rates of golden eagles at 32 to57 individuals for 2005-2012. 57
- P. 3.4-101. Golden Eagle. The Draft EIR summarizes the work of Hunt (2002) and Hunt and Hunt (2006) on golden eagle fatality rates and local population stability, highlighting that the AWPRA represents a population sink for the estimated 60-70 active territories within 30 km of the APWRA (see also Bell and Smallwood 2010). Hunt and Hunt (2006) estimate that the reproductive output of 167 pairs of golden eagles would be required to compensate for the APWRA fatality rate and sustain the local population. Efforts are underway to ascertain the actual size of the local golden eagle population (USGS 2013), but it is likely that immigration of golden eagles into the APWRA from elsewhere is sustaining the local population. 58
- One area that is heavily used by golden eagles in the APWRA is Brushy Peak. The peak and its vicinity are currently devoid of wind turbines. The EBRPD has been tracking golden eagles using GPS/GSM transmitters and current data show that Brushy Peak is a major concentration location for golden eagles (see Figure 2, below) and may represent a communal roost location. Future repowering plans should avoid placing turbines within established buffers around Brushy Peak to provide a turbine-free environment for eagles using Brushy Peak and lower the risk of golden eagle/wind turbine blade strikes. 59

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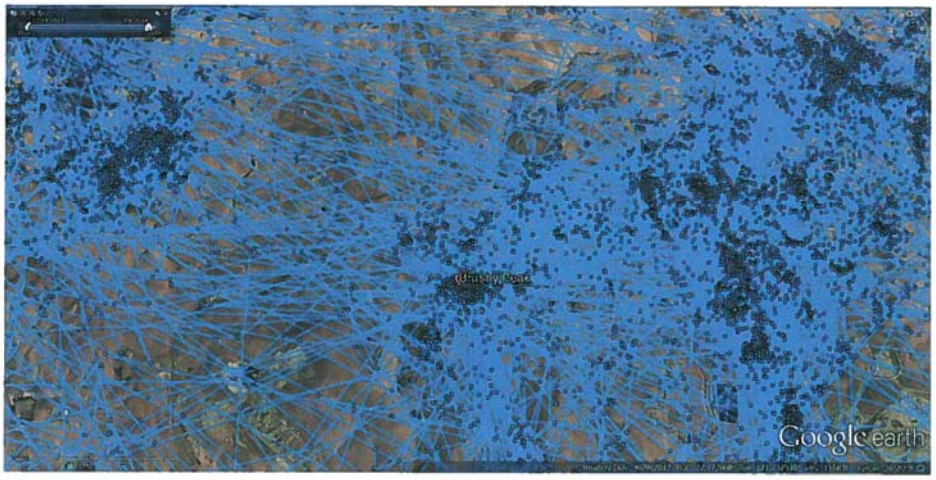

Figure 2. Map of Brushy Peak, northern APWRA, with golden eagle satellite tracking locations superimposed. Brushy Peak is located in the center of the map. Golden eagle locations points (dark circles) with interconnecting tracks (blue). Tracks represent the shortest distance between two location points. Based on tracking information from up to 12 golden eagles between December 2012 and March 2014. Note high concentration of eagle locations centered at Brushy Peak. Scale bar lower left = approx. 6000'. 59 cont.

p. 3.4-102. Prairie Falcon. 60

- The APWRA annual estimated fatality rate for this species for the bird years 2005-2007 ranged from 0 to 22 fatalities/MW/yr, with an average of 7 fatalities/MW/yr (ICF International 2014). Thus, impact of the APWRA on the local breeding population, which ranges from 5-9 pairs, could be severe.
- Prairie falcon use of the AWPRA is higher than indicated by BBS (see above comments under p. 3.4-37).
- Draft EIR states that given this species foraging flight characteristic, it would be "...difficult to hypothesize how repowered turbines may affect the risk of turbine collision." Smallwood et al. (2008) reported prairie falcons engaging in kiting and hovering flights (especially risky behaviors for blade strikes) represented 30% of all observed flights.

p. 3.4-104. Mitigation Measure BIO-11a. Prepare a site-specific avian protection plan. Both the program level and project specific avian protection plans should be spelled out in the Draft PEIR. Our concern is that the current APWRA program of on-call personnel who respond to reports of injured or dead raptors and other birds, record such incidents for reporting to regulatory agencies, and transport animals to rehab centers, will be curtailed. This program is vital to assessing overall impacts of wind operations. 61

p. 3.4-104. Mitigation Measure BIO-11b: Site turbines to minimize potential mortality of birds. We applaud the efforts to use best available science to site repowered turbines to reduce 62

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collision risk, as per Smallwood et al. (2009). However, micro-siting analyses for individual wind projects need to be open and available for review by independent scientists. Recent repowering projects in the APWRA have not been open to pre-construction and post-construction independent review of the turbine micro-siting plans. Extensive public monies have been invested in the risk mapping efforts for the APWRA, thus, the micro-siting process should be open to peer review in both the pre- and post construction phases of a project. There is precedent for need of oversight of wind company compliance with mitigation plans (Smallwood 2008). 62 cont.

p. 3.4-106. Mitigation Measure BIO-11g: Implement post-construction avian fatality monitoring for all repowering projects.

- Post-construction monitoring should begin with start of the commercial operation date (COD), not within 3 months of the COD as listed in the Draft PEIR. Impacts from wind operations begin immediately. Further, start-up of wind farm operations may have greater impacts in the initial phases then later operations and thus should be measured. 63
- The additional monitoring program implemented at year 10 should be three years in duration, not 2 years as listed in the Draft PEIR. This will allow direct comparison with the initial 3 year monitoring program begun at COD, account for inter-year variation in bird use and fatality rates in the APWRA (Smallwood 2013b), and allow for more accurate trend analysis.
- County should consider continuing the Scientific Review Committee (SRC) rather than establishing a TAC. Make-up of the TAC should include qualified scientists, including biostatisticians. 64
- The Draft PEIR should discuss the creation and sun-setting of the APWRA Scientific Review Committee in relation to the 2007 Settlement Agreement, and how the role of the new TAC will compare to the function of the SRC.

p. 3.4-106 to 110. Mitigation Measure BIO-11h: Compensate for the loss of raptors, including golden eagles, by contributing to conservation efforts. 65

- The Draft PEIR should include a discussion of non-raptors and possible mitigation strategies. Compensation strategies should consider cumulative impacts of loss of individuals, e.g. loss of reproductive potential, especially for long-lived birds such as golden eagles. 66
- Contribute to raptor recovery efforts. Draft PEIR should consult with other rehab centers to establish a range of costs for raptor rehabilitation, such as The Lindsay Wildlife Hospital in Walnut Creek and Sulphur Creek Nature Center in Hayward, as those facilities receive the majority of birds wounded in the Altamont. Cost should reflect rehab costs of wind farm injured birds, which often require a higher level of care and surgery if they are not euthanized right away due to irreparable injuries. 67
- Contribute to raptor conservation efforts. The $580/raptor listed in the Draft PEIR should be adjusted after consultation with several rehab centers.
- Contribute to regional conservation of raptor habitat. Additional options for conservation could include: purchasing mitigation credits for golden eagles and other species via conservation banks, similar to those credits that are now applied for threatened and endangered species mitigation (assuming these will be approved by regulatory agencies); credit for retirement of wind farms that are particularly deadly to 68

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wildlife or located in very high risk zones (rather than repowering); payment to ranchers to curtail ground squirrel control programs and compensate them for economic losses; support of hunter-education programs to cease use of lead ammunition; supplying hunter groups with new forms of ammunition at event gatherings, e.g., "squirrel round-ups or shoots" that are now popular throughout the west and that produce copious ground squirrel carcasses with lead fragments that that are subsequently consumed by scavenging eagles. 68 cont.

p. 3.4-110. Mitigation Measure BIO-11i: Implement an avian adaptive management program. The Draft PEIR should not use the non-repowered fatality estimates as the trigger for implementing adaptive management measures, as the APWRA existing fatality rates are already represent a significant and unacceptable level of impact. Threshold levels would need to be revised accordingly. 69

- Thresholds. Draft PEIR implies that thresholds would pertain to only groups of species, i.e., all focal species, all raptors, all non-raptors, all birds. Threshold should be broadened to include individual raptors species and other birds so that if a future unanticipated problem arises with impacts to, for instance, horned larks, mitigation strategies can be implemented. 70
- ADMM-1: Visual Modifications. Painting blades is an unproven mitigation measure. Testing the effect of painting would require huge resource input that would be better spent on other mitigation measures, such as ADMM-4: Turbine curtailment. 71
- ADMM-4 Turbine Curtailment. This would be the most effective mitigation measure, and should be implemented sooner than at threshold 3 in the case of golden eagles. 72
- ADMM-6 Real Time Turbine Curtailment. This measure may be hard to implement in the APWRA, given the frequency and level of raptor use in the area. 73

p. 3.4-111. ADMM-3: Contribution to Research. Draft PEIR should explain how it arrived at the proposed mitigation payment of $2,000 for each golden eagle fatality exceeding thresholds to support research and explain whether this fee would be adequate for cumulative impacts to golden eagles. 74

p. 3.4-112 to 121. Impact BIO-11a-2 through Mitigation Measure BIO-11i. The comments above apply to the Impacts and Mitigation Measures listed for the programs and projects in this Chapter 3.

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E.4.1 Comment Letter LA-1—East Bay Regional Park District

General Response to Letter LA-1

EBRPD summarizes its land management responsibilities and its comments on the program approach. In addition, EBRPD summarizes its comments on the Draft PEIR, which are expressed in more detail in its other comments. Please see the responses to the remaining comments from EBRPD below for responses to these comments.

Response to Comment LA-1-1

The commenter states its opinion that the use of the term *repowering* is misleading. The term *repowering* has been used in the APWRA and in Alameda County for many years to mean the removal and replacement of turbines, and that is the meaning of the term in this document. For example, in the 1998 *Draft Repowering Program EIR*, the County defined repowering as follows:

> "Repowering" refers to the replacement of existing, less efficient turbines with a smaller number of new, larger and more efficient turbines. It is intended that the Repowering Program serve to guide the removal of aging wind turbines and their replacement with the latest generation of advanced technology turbines.

Response to Comment LA-1-2

The commenter states that the program description is unclear in its description of the zoning and general plan regulation of windfarms, that the program description states that the proposed uses are "permitted" by County plans and zoning but then says windfarms are conditionally permitted uses (Draft PEIR, p. ES-3), and that the Draft PEIR should be revised to clearly explain that the Program is not permitted by right and can be denied by the County under adopted General Plan and zoning regulations.

It should be noted that windfarm uses are explicitly allowed by Policy 169 in the East County Area Plan, subject to meeting other related policies (Policies 168 through 175). The "Program," as the *framework* within which the repowering will be considered, cannot itself be 'denied', although individual Conditional Use Permits, if approved as assumed and intended by the County in its East County Area Plan (part of the County General Plan), are subject to specific conditions for discretionary planning approvals as provided for under state law, as well as the requirement to make specific findings.

The first paragraph of Section ES.1.5, *Program Description*, on page ES-3 of the Draft PEIR has been revised as shown below.

> The program is the anticipated approval by the County of new CUPs to allow new windfarm uses in the APWRA, as permitted by ~~both~~ the *East County Area Plan* (ECAP) and <u>conditionally permitted in</u> the County Zoning Ordinance. Windfarm uses are conditionally permitted in the "A" (Agriculture) zone district, which encompasses the entire program area, and in areas designated under the ECAP as Large Parcel Agriculture (LPA), which applies to almost all of the program area. As a program EIR, this document analyzes a series of actions that are related geographically and that are likely to have similar environmental effects that can be mitigated in similar ways (see State CEQA Guidelines Section 15168[a]). The series of actions—anticipated approvals of a series of CUPs—will result in progressive repowering of the APWRA: decommissioning of existing old-generation turbines, installation of new turbines, and operation for the expected life of the new turbines under a 30-year permit and conditions of approval that include implementation of the identified mitigation measures.

When approving new CUPs for repowering, the County intends to facilitate such repowering projects through reliance on the mitigation measures contained in this PEIR as uniform standards where appropriate and by tiering from this PEIR to provide a framework for an area-wide analysis.

Response to Comment LA-1-3

Please see Master Response 1, *Baseline and Determination of Significance*, regarding the identification of the baseline for the analysis in the PEIR. The baseline for assessing the impacts of the proposed program and projects is the existing conditions, which include operating wind turbines. The PEIR evaluates a future scenario—the No Repowering, Full Decommissioning alternative under which all turbines would be decommissioned and no new turbines would be constructed—in Chapter 4, *Alternatives Analysis*, of the Draft PEIR.

The commenter expresses the opinion that windfarms are an "ephemeral" use. Infrastructure to support wind energy generation, including roads, transmission lines, and substations is established can continue to support wind energy generation with successive generations of wind turbine technologies.

The commenter's statement that the County has linked "reclamation of old turbines to approval of future land use entitlements and CEQA clearance" is not correct. Reclamation of old turbines is required as a condition of approval of the CUPs authorizing operation of the old turbines. The PEIR describes the impacts of decommissioning of existing turbines in response to scoping comments. In addition, decommissioning of proposed turbines is analyzed in the PEIR, as these actions would be part of the implementation of the CUPs for new turbines.

Response to Comment LA-1-4

Please see Master Response 2, *Program Area Boundary*, regarding the program area boundary. The PEIR does present a program-level environmental analysis of the County approving permits for wind energy projects within the expanded boundary. When specific projects are proposed, the environmental review will be carried out at a project-specific level, and the impacts of specific turbine locations will be analyzed at that time.

Response to Comment LA-1-5

The Draft PEIR presents a description of existing conditions. Please see Master Response 1, *Baseline and Determination of Significance*, for more discussion of existing conditions and baseline. To the extent that changes in the environment took place after 1980, those changes would be reflected in the actual existing physical conditions in the program area.

Response to Comment LA-1-6

The commenter suggests that the County should identify areas where turbine development is prohibited for viewshed protection, specifically in the areas of Brushy Peak Regional Preserve and the proposed Tesla Park. At this time, as described in the Draft PEIR, no turbines are proposed to be sited in the areas described in this comment as being of concern. The County has not undertaken studies that would support its identifying specific areas where turbine development should be prohibited. However, as described in detail in Section 1.1.2, *Program-Level Analysis and Tiering*, on page 1-1 of the Draft PEIR, specific projects proposed in the future would undergo project-level environmental analysis tiered from the PEIR.

Response to Comment LA-1-7

The commenter states that Mitigation Measure AES-2a will result in additional environmental impacts and that it does not contain performance standards. The text of Mitigation Measure AES-2a may be confusing; accordingly, the text of the mitigation measure on page 3.1-16 of the Draft PEIR has been revised as shown below. New-generation turbines may not be developed in strings.

> **Mitigation Measure AES-2a: Require site development review**
>
> ~~Do not allow n~~New turbines along ridgelines or hilltops that have not previously been developed with ~~wind~~ commercial-scale wind turbine~~ strings~~s will not be allowed~~,~~ unless a separate Site Development Review ~~for proposed new turbine~~ is completed that determines that the visual effects will be substantially avoided by distance from public view-points (e.g., ~~over~~ more than 2,000 feet), intervening terrain, screening landscaping, or compensatory improvements to equivalent and nearby (radius of 1 mile) scenic features, as approved by the Planning Director.

Mitigation Measure AES-2a does contain performance standards, stating that the Site Development Review must determine that visual effects will be substantially avoided by at least one of the following.

- Distance from public view points (e.g., over 2,000 feet).
- Intervening terrain, screening landscaping.
- Compensatory improvements to equivalent and nearby (radius of 1 mile) scenic features.

Site development review for aesthetics impacts is commonly used for all types of projects, as the specific elements of projects and siting can differ widely and the aesthetics impacts are largely dependent on project-specific elements.

Please see also Response to Comment GP-2-3.

Response to Comment LA-1-8

The commenter states that the visual analysis does not adequately evaluate the cumulative impacts of buildout of the program area and that it should address the cumulative visual effects of the three Contra Costa County repowering projects (i.e., Buena Vista, Tres Vaqueros, and Vasco Winds). The Buena Vista and Vasco Winds projects, currently in operation, are part of the existing visual environment of the program and project areas. The existing visual environment and visual impacts on existing conditions are discussed and analyzed in Section 3.1, *Aesthetics*. The cumulative visual analysis considers existing conditions, the proposed projects and program, and future projects within the viewshed of public and recreational users of the program and project areas and how those projects combined would affect existing conditions. Accordingly, the cumulative aesthetic analysis specifically discusses the Contra Costa County projects and the proposed program and projects analyzed in Chapter 3.

Response to Comment LA-1-9

The last paragraph in the discussion of Impact HAZ-9a-1 on page 3.8-28 of the Draft PEIR includes the following statement.

> Individual windfarm companies strictly control access to the existing wind energy facilities, and overall site access is limited to persons approved for entry by the windfarm operators or landowners.

The commenter states that limiting access in this way will restrict agricultural use of windfarm sites. Agricultural use of windfarm sites is at the discretion of landowners, who would, as stated in the Draft PEIR text above, have the authority to approve persons for entry. Consequently, access for agricultural use of windfarm sites would not be restricted.

Response to Comment LA-1-10

This comment summarizes Comment LA-1-4. Please see Response to Comment LA-1-4.

Response to Comment LA-1-11

Please see Master Response 1, *Baseline and Determination of Significance*, for a response to this comment.

Response to Comment LA-1-12

The commenter indicates that the discussion of biases in avian fatality rate estimates is confined to bias in detection probability. The commenter is referred to *Potential Biases in the Avian Fatality Analysis Methods* on pages 3.4-53 and 3.4-54 of the Draft PEIR, where the discussion of bias in avian fatality rates includes a discussion of biases associated with detection probability, hazardous turbine removals, seasonal shutdowns, and the small number of sites in the APWRA from which repowered fatality rates are obtained. In addition, please see Master Response 5, *Avian Fatality Monitoring Study*, for a response to issues related to monitoring and detection probability.

Response to Comment LA-1-13

The rates used in the Draft PEIR are from the latest report and thus are free of the "data issues" referred to in the comment. The commenter correctly points out that the avian fatality rate for repowered turbines is based on a small and potentially biased set of turbines; this potential is clearly acknowledged in the PEIR document. The commenter suggests that more variability needs to be included in the threshold analysis. However, no additional appropriate sources of information from which to obtain more variability are available. The addition of more variability into the analysis would not change the conclusion, and the variation and biases in the data are thoroughly discussed in the document. Please see also Master Response 4, *Estimated Avian Mortality Rates Methodology*, for more detailed information.

Response to Comment LA-1-14

The commenter requests that the analysis be extended to all species, including passerines. However, adjusted fatality rates for all species are not available for the Buena Vista site. The fatality rates of non-focal species are readily available for the baseline as well as the other two project sites from which the repowered rates were calculated.

Response to Comment LA-1-15

The commenter states that "Brushy Peak is a major concentration point for golden eagles in the APWRA and so should be avoided." As discussed in Response to Comment LA-1-6 and as described in the Draft PEIR, at this time no turbines are proposed to be located in the area described in this comment as being of concern. However, as described in detail in Section 1.1.2, *Program-Level*

Analysis and Tiering, on page 1-1 of the Draft PEIR, specific projects proposed in the future would undergo project-level environmental analysis tiered from the PEIR.

Response to Comment LA-1-16

The commenter states that the micro-siting analyses for individual wind projects as required in Mitigation Measure BIO-11b on page 3.4-104 of the Draft PEIR need to be open and available for public review. As noted in Master Response 8, *Avian Protection Plan*, project-specific APPs will be required for each project and will be reviewed by the TAC. Additionally, as noted in Master Response 6, *Technical Advisory Committee*, the TAC meetings will be open to the public. The County believes the establishment of the TAC and a review process open to the public will provide the transparency the commenter is suggesting.

Response to Comment LA-1-17

Please see Master Response 8, *Avian Protection Plan*, for a response to this comment.

Response to Comment LA-1-18

The commenter states in this summary of comments provided in more detail in the attachment to this comment letter that additional mammal species should be addressed in the PEIR. The commenter lists mammal species in comment LA-1-42. Please see Response to Comment LA-1-42 for a response to this comment.

Response to Comment LA-1-19

Please see Master Response 11, *Bat Impacts and Mitigation*, for a response to this comment.

Response to Comment LA-1-20

The commenter states that the EIR is inadequate in that it does not evaluate impacts or provide mitigation measures for cultural resources in the Brushy Peak area. As described in *Program Area* on page 3.5-6 of the Draft PEIR, the Brushy Peak Archaeological District is *outside* the program area. The program area in the vicinity Brushy Peak has supported wind turbines for more than 30 years; these turbines will be replaced by far fewer turbines under either repowering alternative. As described in detail in Section 1.1.2, *Program-Level Analysis and Tiering*, on page 1-1 of the Draft PEIR, specific projects proposed in the future would undergo project-level analysis tiered from this PEIR. Mitigation Measures CUL-2a and CUL-2b specify that the County will require project applicants to retain qualified personnel to conduct archaeological field surveys to determine if significant resources are present within individual project areas and ensure that appropriate measures be implemented if any such resources are identified. Although most of the program area has been surveyed, these measures are in place to ensure that no resources are overlooked. Only 10 prehistoric resources have been identified within the program area.

The commenter suggests that Mitigation Measure CUL-1a is inadequate to prevent a substantial adverse change in the significance of a historical resource, especially to Native Americans. However, Mitigation Measure CUL-1a is directed primarily at historic—or *built environment*—resources. Mitigation Measures CUL-2a, CUL-2b, and CUL-2d address the commenter's concern regarding Native American resources.

It should be noted that the Sacred Lands File search (conducted for the County by the Native American Heritage Commission) for the program area yielded no results. Moreover, as detailed in *Summary of Native American Contact* on page 3.5-12 of the Draft PEIR, the County sent letters describing the program to the Native American contacts provided by the NAHC and no responses were received.

Response to Comment LA-1-21

Impacts of blade throw hazard on recreationists, motorists, and residents are specifically described in Impacts HAZ-9a-1, HAZ-9a-2, HAZ-9b, and HAZ-9c in Chapter 8, *Hazards and Hazardous Materials*, of the Draft PEIR.

The commenter observes that the PEIR states that "the County's buffer guidelines are not based on conclusive data." The first paragraph of Impact HAZ-9a-1 on page 3.8-26 of the Draft PEIR, however, includes the following statement.

> Definitive data, however, are limited—particularly for the current generation of wind turbines in terms of blade throw distances—because typical failure reports do not differentiate between blade throw and other types of failures.

This does not mean that the County's standards for buffers, which are implemented through conditions of approval of CUPs for wind energy generation projects, are based on no data, only that available data are limited. As described in detail in Section 1.1.2, *Program-Level Analysis and Tiering*, on page 1-1 of the Draft PEIR, specific projects proposed in the future would undergo project-level environmental analysis tiered from this PEIR. At that time, the County will apply conditions of approval requiring buffers as appropriate for the specific project, as described in the second paragraph of Impact HAZ-9a-1 on pages 3.8-26 and 3.8-27 of the Draft PEIR.

The commenter states that trespass is a common condition and that the PEIR should evaluate the blade throw hazard to trespassers. The PEIR cannot evaluate all possible scenarios, including violation of laws. The analysis in the PEIR assumes that laws are not broken.

The commenter states that the PEIR analysis is based on comparing the risk of existing turbines to that of repowered turbines. This is not correct. The risk of blade throw is based on the size and characteristics of proposed turbines. A comparison to existing turbines is provided, but the analysis evaluates the risk from each new turbine. Blade throw risk was evaluated for all land uses in the program boundary and for specific turbine locations that are currently proposed under the two individual projects. One turbine proposed under the Golden Hills Project could be near the potential trail identified on the EBRPD Existing and Potential Parklands and Trails map of its Master Plan as the San Joaquin County Shadow Cliffs portion of the Iron Horse Trail. Table 2-2 on page 2-13 of the Draft PEIR presents the County's standard buffers, which include buffers from trails. Table 2-2 has been revised as shown below.

Table 2-2. Updated Alameda County Turbine Setback Requirements

Affected Land Use or Corridor	General Setback	~~Elevation Differential~~Setback Adjustment for Turbine Elevation Above or Below Affected Use[a]	~~Adjustable~~ Alternative Minimum[b]
Adjacent parcel with approved wind energy CUP[c]	1.1 times rotor length	1% TTH added or subtracted per 10 ft. of turbine elevation, respectively, above or below affected parcel	50% of general setback
Adjacent parcel without approved wind energy CUP	1.25 times TTH	1~~0~~% TTH per 10~~0~~ ft above or below affected parcel	1.1 times rotor length
Adjacent dwelling unit	3 times TTH	1~~0~~% TTH per 10~~0~~ ft above or below affected unit	50% of general or elevation differential setback
Public road (including I-580), trail, commercial or residential zoning	2.5 times TTH	1~~0~~% TTH per 10~~0~~ ft above or below affected right-of-way	50% of general ~~or elevation differential~~ setback with report by qualified professional, approved by Planning Director
Recreation area or property	1.25 times TTH	1~~0~~% TTH per 10~~0~~ ft above or below affected property	TTH
Transmission line[d]	2 times TTH	1~~0~~% TTH per 10~~0~~ ft above or below path of conductor line at ground level	50% of general setback with report by qualified professional, approved by Planning Director~~TTH~~

Note: TTH = total turbine height: the height to the top of the rotor at 12:00 position. Setback distance to be measured horizontally from center of tower at ground level.

[a] The General Setback based on TTH will be increased or reduced, respectively, based on whole 10-ft increments in the ground elevation of the turbine above or below an affected parcel, dwelling unit, road right-of-way, or transmission corridor conductor line. Any portion of a 10-ft increment in ground elevation will be disregarded (or rounded down to the nearest 10-ft interval).~~Elevation Differential refers to additional setback (above the general setback based on TTH) based on the elevation of the turbine above the affected downslope parcel.~~

[b] ~~*Adjustable*~~ *Alternative Minimum* refers to a reduced setback standard, including any adjustment for elevation, allowed with a notarized agreement or an easement on the affected property, subject to approval of the Planning Director.

[c] No setback from parcel lines is required within the same wind energy CUP boundary. Knowledge of proposed wind energy CUPs on adjacent parcels to be based on best available information at the time of the subject application.

[d] Measured from the center of the conductor line nearest the turbine.

Response to Comment LA-1-22

The commenter states that the impact evaluation related to wildland fire and hazardous materials assessed the impact by comparing the operation of proposed new turbines to the operation of existing turbines. This is not correct. Impacts HAZ-8a-1, HAZ-8a-2, HAZ-8b, and HAZ-8c on pages 3.8-24 through 3.8-26 of the Draft PEIR describe the impacts associated with operation of new turbines. The conclusion in the PEIR is informed by two considerations that would serve to reduce

fire hazard associated with the operation of new turbines: CAL FIRE and ACFD already provide fire protection services to the program area, and the fire protection facilities and infrastructure required to protect the existing facilities are in place. Impacts HAZ-2a-1, HAZ-2a-2, HAZ-2b, and HAZ-2c on pages 3.8-13 through 3.8-15 of the Draft PEIR describe the impacts associated with operation of new turbines. The PEIR concludes that implementation of existing regulations will ensure that impacts would be less than significant.

Response to Comment LA-1-23

While taller than the existing wind turbines, the proposed turbines would be established as new features of the built environment for which pilots would be provided warnings and educational notices. As discussed in *Aviation Hazards* on page 3.8-2 of the Draft PEIR, the Federal Aviation Administration (FAA) requires each turbine developer (or for any structure more than 200 feet above ground level) to file a Notice of Proposed Construction, with plans for marking and lighting, and the FAA will issue either a Determination of No Hazard or a Notice of Presumed Hazard. Because these procedures apply throughout the County, there would be no additional effect associated with the expansion of the program area, and the issue has been addressed adequately at a program level in the Draft PEIR. Helicopters and fixed-wing aircraft used to fight fires commonly do so while avoiding high voltage power lines, tall cellular towers, and strings of wind turbines. As long as these features are visible (i.e., lighted at night), they are easily avoided by pilots (Southern Tablelands Renewables 2014).

As described in Chapter 2, *Program Description*, of the Draft PEIR, although the new turbines will be much taller and wider than the old turbines, there will be far fewer of them, and they will be more widely spaced. Consequently, there would be more areas for emergency helicopters to land, if necessary. In addition, the design of new turbines will allow them to be shut down remotely in the event of an emergency, reducing accidents related to fire and worker injury. The new turbines can also be shut down with the lowest possible profile (e.g., with two rotor blades at the 2 and 10 o'clock positions) to be less than 500 feet in height, the lowest elevation at which aerial tankers (fixed-wing aircraft) normally operate when engaged in firefighting (Payne pers. comm.). While the increased height of the new turbines would represent a greater challenge to firefighting by aerial tankers, the undergrounding of power lines and other improved safety features, as well as greater safety for helicopter-based firefighting activities, would roughly compensate for the taller obstacles.

Response to Comment LA-1-24

The PEIR identifies compliance with NPDES requirements as a mitigation measure to ensure that runoff and erosion do not affect water quality. Mitigation Measure WQ-1, on pages 3.9-8 through 3.9-9 of the Draft PEIR, contains specific requirements. The County will require reclamation of roads following decommissioning of turbines as described in detail in *Reclamation Activities* on pages 2-22 and 2-23 of the Draft PEIR.

Response to Comment LA-1-25

Please see Responses to Comments FA-1-1 and FA-1-36 for a response to this comment.

Response to Comment LA-1-26

The commenter states that the proposed program conflicts with County General Plan Policy 133, which requires the minimization of impacts on avian species from wind turbine operations. The commenter also states that the Draft PEIR ignores important bird use areas such as Brushy Peak, which the commenter states is an important area for golden eagles. Lastly, the commenter recommends that the program should be modified to affirmatively steer development away from constrained areas such as Brushy Peak by amending its General Plan land use map and Zoning Designation to not allow windfarms in sensitive areas. The County appreciates the comment and does seek to minimize impacts on avian species consistent with General Plan Policy 133 wherever feasible. As summarized in Section ES.1.4 on page ES-3 of the Draft PEIR, the PEIR analyzes a series of actions that are related geographically and that are likely to have similar environmental effects that can be mitigated in similar ways. Additionally, as noted in the Draft PEIR, two specific projects are analyzed. The series of actions in this case is an anticipated series of CUPs authorizing progressive repowering of the APWRA. The specifics of future projects, including their proximity to Brushy Peak, are unknown at this time. However, as mentioned previously, the County has included measures in the Draft PEIR to avoid, minimize, and mitigate impacts on avian species. Specifically, Mitigation Measure BIO-11a requires applicants to prepare a project-specific avian protection plan, Mitigation Measure BIO-11b requires applicants to site turbines to minimize potential mortality of birds, Mitigation Measure BIO-11c requires applicants to use turbine designs that reduce avian impacts, Mitigation Measure BIO-11d requires applicants to incorporate avian-safe practices into project designs, Mitigation Measure BIO-11e requires applicants to retrofit existing infrastructure that is dangerous for birds, Mitigation Measure BIO-11f requires applicants to discourage prey for raptors, Mitigation Measure BIO-11g requires applicants to implement postconstruction monitoring to determine the project-specific impacts, Mitigation Measure BIO-11g requires applicants to compensate for the loss of all raptors, and Mitigation Measure BIO-11i requires applicants to implement other adaptive management measures if baseline fatalities are exceeded. Each of these measures is consistent with the County's General Plan Policy 133 because they serve to minimize impacts on avian species from wind turbine operations.

The County anticipates that environmental analysis of future individual projects would tier from the mitigation measures set forth in the PEIR and would analyze the specific impacts of individual projects as they are proposed. Consequently, future projects, if proposed near Brushy Peak, would be required to comply with each of these mitigation measures and would be required to demonstrate how they would avoid, minimize, and mitigate avian impacts, including impacts on golden eagles.

Response to Comment LA-1-27

As described in Response to Comment LA-1-21, one turbine proposed under the Golden Hills Project could be near the potential trail identified on the EBRPD Existing and Potential Parklands and Trails map of its Master Plan as the San Joaquin County Shadow Cliffs portion of the Iron Horse Trail. Table 2-2 on page 2-13 of the Draft PEIR presents the County's standard buffers, which include buffers from trails. Application of these buffers will ensure that no turbine is located closer to a trail than the County's standards allow, ensuring that there will be no land use conflict.

Response to Comment LA-1-28

The issue of theft of materials from windfarm facilities is addressed in *Law Enforcement* on pages 3.13-3 and 3.13-4 of the Draft PEIR. New turbines will be much bigger than old turbines, and there will be fewer of them, as each turbine generates more power, as described in Chapter 2, *Program Description*, of the Draft PEIR. Due to their size, design, and decreased numbers, new turbines will be less vulnerable to theft and vandalism. The County's experience over many years of providing police services to the APWRA is that the operators provide a high level of security at the windfarm facilities, which are on private property, and wind energy generation has not resulted in a high demand for police services.

Response to Comment LA-1-29

The commenter expresses concerns regarding the interference of turbines with aerial firefighting and emergency response efforts. Please see Response to Comment LA-1-23 for a response to this comment.

Response to Comment LA-1-30

Please see Master Response 1, *Baseline and Determination of Significance*, for a response to this comment.

Response to Comment LA-1-31

The commenter suggests that an alternative be analyzed in the PEIR that excludes sensitive locations. An alternative (the Avoid Specific Biologically Sensitive/Constrained Areas Alternative) that was analyzed in the PEIR would prescribe a turbine layout that would avoid placing new turbines in areas that would necessitate the construction of new roads traversing biologically sensitive or constrained areas.

The commenter further suggests that the alternative should also include amending the County's General Plan land use map and zoning designations to not allow windfarms in sensitive areas. Please see Responses to Comments LA-1-6 and LA-1-26 for a response to the suggestion of delineating areas prohibiting windfarms.

Response to Comment LA-1-32

The County requires reclamation and financial assurances for completion of reclamation as conditions of approval of CUPs for windfarms. Required reclamation is described in detail in *Reclamation Activities* on pages 2-22 and 2-23 of the Draft PEIR.

Response to Comment LA-1-33

The commenter requests that the discussion of the MBTA include a statement that take associated with the projects cannot be authorized under the MBTA. The description of the Migratory Bird Treaty Act on pages 3.4-1 and 3.4-2 of the Draft PEIR has been revised as shown in Response to Comment FA-1-8.

Response to Comment LA-1-34

The commenter notes that USFWS issued a programmatic eagle take permit on June 26, 2014. The programmatic eagle take permit had not been issued at the time of issuance of the Draft PEIR. The third paragraph of *The Bald and Golden Eagle Protection Act* on page 3.4-2 of the Draft PEIR has been revised as shown below.

> USFWS issued the Eagle Conservation Plan Guidance (ECP Guidance) intended to assist parties to avoid, minimize, and mitigate adverse effects on bald and golden eagles (U.S. Fish and Wildlife Service 2013a). The Eagle Guidance calls for scientifically rigorous surveys, monitoring, assessment, and research designs proportionate to the risk to eagles. The Eagle Guidance describes a process by which wind energy developers can collect and analyze information that could lead to a programmatic permit to authorize unintentional take of eagles at wind energy facilities. USFWS recommends that eagle conservation plans be developed in five stages. Each stage builds on the prior stage, such that together the process is a progressive, increasingly intensive look at likely effects on eagles of the development and operation of a particular site and configuration. Additional refinements to the Eagle Guidance are expected at some point in the future. To date, one ~~no~~ programmatic eagle take permit~~s have~~ has been issued by USFWS on June 31, 2014 (http://www.fws.gov/cno/conservation/migratorybirds.html).

The commenter also noted that the entities repowering the APWRA should seek an eagle take permit to adequately address mitigation and compensation for the unavoidable take of eagles during the life of the CUP. The County notes that application for a programmatic eagle take permit is made to USFWS under the Bald and Golden Eagle Protection Act and that it is a voluntary process. The County acknowledges in the Draft PEIR that eagles will continue to be at risk in the APWRA following repowering. While the County cannot require applicants to apply for eagle take permits, many of the PEIR mitigation measures in the Draft PEIR have been modeled on the avoidance, minimization, and mitigation measures outlined in USFWS's ECP Guidance. Additionally, Mitigation Measure BIO-11h, beginning on page 3.4-107 of the Draft PEIR, presents several mitigation options, including an option for applicants to use a USFWS-approved ECP and Bird and Bat Conservation Strategy (BBCS), to satisfy compensatory mitigation requirements. The County believes that including this option may provide incentive for wind operators to apply for eagle take permits.

Response to Comment LA-1-35

The commenter requests a statement that CDFW cannot authorize take for fully protected species. That information is already presented in the referenced discussion. No revisions to the Draft PEIR are necessary.

Response to Comment LA-1-36

The commenter requests a statement that CDFW cannot issue take permits under Sections 3511, 3513, and 4700 of the California Fish and Game Code. *Protection of Birds and Raptors* on page 3.4-5 of the Draft PEIR has been revised as shown below.

> Section 3503 of the California Fish and Game Code prohibits the killing of birds and/or the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and/or the destruction of raptor nests. Typical violations include destruction of active bird and raptor nests as a result of tree removal, and failure of nesting attempts (loss of eggs and/or young) as a result of disturbance of nesting pairs caused by nearby human activity. Section 3513 prohibits any take or possession of birds designated by the MBTA as migratory nongame birds except as allowed by federal rules and

regulations pursuant to the MBTA. CDFW cannot issue permits for the take of birds by the program or the Golden Hills and Patterson Pass projects.

Response to Comment LA-1-37

The commenter correctly states that the East Alameda County Conservation Strategy (EACCS) programmatic BO does not cover avian and bat effects caused by wind energy projects and cannot provide take authorization. This is stated in the third paragraph of *East Alameda County Conservation Strategy* on page 3.4-6 of the Draft PEIR.

Response to Comment LA-1-38

The commenter notes that the Draft PEIR states that the draft APP was developed to allow wind energy projects to comply with applicable statues regarding migratory birds and that compliance with MBTA is not possible if there is take of migratory birds. The second paragraph of *2007 Settlement Agreement* on page 3.4-7 of the Draft PEIR has been revised as shown below to clarify how the APP would be used by wind energy projects in the context of applicable statues.

> As an alternative to the NCCP called for in the Settlement Agreement, the County has developed a draft *Avian Protection Program* (APP) to provide a framework and process for wind energy projects to ~~comply with~~address applicable statutes (e.g., MBTA and BGEPA) through the repowering process.

Please refer to Master Response 8, *Avian Protection Plan*, for a response to the comment regarding inclusion of the APP in the PEIR.

Response to Comment LA-1-39

The commenter requested that the section *Special-Status Species* should be renamed to include non-special status species such as red-tailed hawk and prairie falcon. Rather than rename the section, which is a standard component of CEQA documents, two categories have been added to the list of special-status species definitions that appears on pages 3.4-20 and 3.4-21 of the Draft PEIR as shown below.

- Species that are listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.11 [listed animals]; 50 CFR 17.12 [listed plants]; and various notices in the Federal Register.
- Species that are candidates for possible future listing as threatened or endangered under ESA (77 FR 69993, November 21, 2012).
- Species that are listed or proposed for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5).
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380).
- Plants listed as rare under the CNPPA (California Department of Fish and Wildlife Commission 1900 et seq.).
- Plants with a California Rare Plant Rank of 1A, 1B, 2A, and 2B (California Department of Fish and Wildlife 2013).
- Animals listed as California species of special concern on CDFW's Special Animals List (California Department of Fish and Game 2011).
- Animals that are fully protected in California (California Department of Fish and Wildlife Commission 3511 [birds], 4700 [mammals], 5050 [amphibians and reptiles], and 5515 [fish]).

- Bats identified as medium or high priority on the Western Bat Working Group regional priority species matrix (Western Bat Working Group 2007).
- APWRA focal species.
- Species of local conservation concern in the APWRA.

Response to Comment LA-1-40

The commenter noted that the species account for large-flowered fiddleneck should be updated with the latest occurrence data from Lawrence Livermore Laboratory rare plant reports. The County has reviewed the most recent available report from 2012 and has updated the species account as suggested. Inclusion of this information does not change the findings or conclusions in the Draft PEIR. The discussion of *Large-Flowered Fiddleneck* on page 3.4-21 of the Draft PEIR has been revised as shown below.

> Large-flowered fiddleneck is state- and federally listed as endangered, with a California Rare Plant Rank of 1B.1. Historically, it was known from the Mount Diablo foothills in Contra Costa, Alameda, and San Joaquin Counties, but it is currently known only from two natural occurrences near Corral Hollow Road in San Joaquin County (Kelley and Ganders 2012:454; California Department of Fish and Wildlife 2013b). Large-flowered fiddleneck grows in grasslands, generally on north-facing slopes. A single population was known from the program area, located on Lawrence Livermore Laboratory's Site 300 test area (California Department of Fish and Wildlife 2013b). This occurrence ~~has not been observed since 1997 and~~ appears to have been extirpated by erosion and has not been observed since 1997 (Carlsen et al. ~~1999~~2012). California annual grasslands in the program area are potential habitat for this species.

The updated citation has been corrected in the references section of Section 3.4, *Biological Resources*.

Response to Comment LA-1-41

The commenter requests project-specific information about the occurrence of longhorn fairy shrimp. At the time the Draft PEIR was written, neither the Patterson Pass nor Golden Hills project areas had been surveyed for biological resources. Since that time, the Patterson Pass project area has been surveyed by an ICF wildlife biologist, and although rock outcrops are present in the project area, they do not contain pool habitat for longhorn fairy shrimp. The Golden Hills project area has not yet been surveyed, but it is assumed that at a minimum, the project area contains grassland pools that are suitable for longhorn fairy shrimp. Clarifications have been added to the EIR to reflect the new information acquired at Patterson Pass. The fourth paragraph of *Longhorn Fairy Shrimp* on page 3.4-25 of the Draft PEIR has been revised as shown below.

> Grass-bottom seasonal pools and rock outcrop pools that are suitable for longhorn fairy shrimp may be present within the Golden Hills project area. One seasonal wetland in the Patterson Pass project area provides suitable habitat for longhorn fairy shrimp. Although rock outcrops are present in the Patterson Pass project area, they do not contain suitable pool habitat for longhorn fairy shrimp. There are no CNDDB records for occurrences of longhorn fairy shrimp in either of the project areas (California Department of Fish and Wildlife 2013c). There is no designated critical habitat for longhorn fairy shrimp in the Golden Hills or Patterson Pass project areas (Figure 3.4-4).

Response to Comment LA-1-42

The commenter requests that the Draft PEIR address San Joaquin pocket mouse, San Francisco dusky-footed woodrat, and San Joaquin kangaroo rat. San Joaquin pocket mouse is no longer

considered a species of special concern (California Department of Fish and Wildlife 2011) and therefore is not addressed as such in the EIR. The program area is outside the range of San Joaquin (Tulare) kangaroo rat and other kangaroo rat species. The program area is within the range of San Francisco dusky-footed woodrat, and a limited amount of suitable habitat is present within the program area. Relative to the sizes of the program area and project areas, small amounts of chaparral, scrub, oak woodland, and riparian forest/woodland are within the program area (Table 3.4-1), and small amounts of mixed willow riparian scrub are within the Golden Hills and Patterson Pass project areas (Tables 3.4-2 and 3.4-3 respectively). It is anticipated that the majority of construction activities would take place on grassland habitat along ridgelines and that loss of chaparral, scrub, oak woodland, and riparian forest/woodland habitat would be minimal. Because temporary and permanent impacts on suitable habitat for San Francisco dusky-footed woodrat are expected to be very small (Table 3.4-7), and the potential for injury and mortality would consequently also be very unlikely, this impact is less than significant. Accordingly, no revisions to the Draft PEIR are necessary.

Response to Comment LA-1-43

The commenter indicates that there is at least one new record of Swainson's hawks nesting in the program area. The second paragraph of *Swainson's Hawk* on page 3.4-35 of the Draft PEIR has been revised as shown below.

> Although suitable nesting and foraging habitat for Swainson's hawks is present in the program area, Swainson's hawks more typically occur in flat terrain and rarely occur in the foothills of the Coast Ranges. There is one CNDDB record of a Swainson's hawk nest in the northeastern portion of the program area (California Department of Fish and Wildlife 2013c), and East Bay Regional Park District (EBRPD) reported a Swainson's hawk nesting in the program area (Barton pers. comm.). There are 11 additional CNDDB records of Swainson's hawk nests east and northeast of the program area, including one that is just outside of the program area. Swainson's hawk has been documented as a fatality only once in more than 7 years of intensive fatality monitoring (ICF International 2013), and only 11 sightings of Swainson's hawks have been recorded in the program area in more than 7 years of avian use monitoring conducted throughout the program area by the AFMT (Alameda County unpublished data).

Response to Comment LA-1-44

The commenter requested that additional detail be added to the red-tailed hawk species account with regard to flight behavior. Mitigation Measure BIO-11b requires the careful siting of turbines using landscape features and location-specific bird use and behavior data to identify locations with reduced collision risk. Siting would be based on this information, and would be reviewed by the TAC and the County to ensure that the most up-to-date information is considered at the time individual projects are designed. Consequently, the use of flight behavior to inform siting is already addressed in the Draft PEIR. No revisions to the PEIR are required.

Response to Comment LA-1-45

The commenter requests that additional information regarding golden eagle habitat and occurrences be added to the species account. The description of *Golden Eagle* on pages 3.4-36 and 3.4-37 of the Draft PEIR has been revised as shown in Response to Comment FA-1-9.

Response to Comment LA-1-46

The commenter suggests identifying prairie falcon as a species of local conservation concern in the APWRA. Several changes have been made throughout the chapter to address this issue; please see Response to Comment LA-2-9 for a discussion of the clarified definitions of special-status species. The commenter also provides additional information from unpublished EBRPD data regarding nesting records of prairie falcon and results of EBPRD's telemetry study showing use of the APWRA by prairie falcons nesting more than 10 miles from the program area. The text of the species account on pages 3.4-37 and 3.4-38 of Draft PEIR has been revised to incorporate this new information as shown below.

> Prairie falcon is not a state- or federally listed species. However, it is protected under the MBTA and the California Fish and Game Code and is a species of local conservation concern in the APWRA due to the high number of recorded fatalities. Prairie falcon inhabits arid environments of western North America in open plains and shrub-steppe deserts with cliffs, bluffs, or rock outcroppings. An efficient and specialized predator of medium-sized desert mammals and birds, prairie falcons range widely, searching large areas for patchily distributed prey. Nesting, postnesting, and wintering ranges are generally widely separated, with movements between ranges being potentially dependent on seasonal availability of prey. These diurnal hunters prey predominantly on ground squirrels, small birds, reptiles, and insects. Hunting strategies include still-hunting from perches, soaring, and low active flight (Phipps 1979). Prairie falcons nest on cliffs with eagles, ravens, and red-tailed hawks, but have also been known to use trees, caves, buildings, and transmission lines (Nelson 1974; Pitcher 1977; Haak and Denton 1979; MacLaren et al. 1984; Roppe et al. 1989; Bunnell et al. 1997).
>
> ~~Thirteen observations of prairie falcons were recorded during monitoring at two sites within the program area, including one nest observed with both male and female adults and one young (Howell and DiDonato 1991).~~ The CNDDB (2013c) lists two prairie falcon occurrences within the program area, and 11 more within 10 miles of the program area boundary. Twenty-six observations of prairie falcons were recorded during fixed point surveys around the Diablo Winds repowering project from 2005 to 2007 (Western Ecosystems Technology 2008). At least four recent known nest sites have been identified within the APWRA and at least two within 2 miles of the program area. A telemetry study conducted by East Bay Regional Parks District (unpublished data) has documented extensive use of the program area by prairie falcons nesting more than 10 miles from the program area (Final PEIR Appendix E, Comment LA-1-46).

Response to Comment LA-1-47

The commenter suggests that the discussion of avian fatalities be expanded to include all species of birds that have been taken by windfarm operations in the APWRA. All bird species are included in the analysis; however, they are summarized into raptor and non-raptor categories, rather than addressed as individual species. Please see Response to Comment FA-1-11 for more information.

Response to Comment LA-1-48

The commenter states that the comparison of fatality rates at old and new generation turbines—which forms the foundation of the analysis of operational impacts on birds—is based on the most recent science available, but expresses concerns about this comparison. The commenter is referred to *Potential Biases in the Avian Fatality Analysis Methods* on page 3.4-53 of the Draft PEIR for a discussion of the potential pitfalls of the analysis. Please see also Master Response 4, *Estimated Avian Mortality Rates Methodology*, and Master Response 5, *Avian Fatality Monitoring Methodology*.

Response to Comment LA-1-49

The commenter suggests that raw data as provided in Table 3.4-6 is insufficient for analysis. The table is intended to provide raw, unadjusted fatality numbers, since little statistically sound information exists on adjusted bat fatality rates at APWRA under the earlier avian monitoring program. Moreover, the primary purpose of the table is to support the assertion of species that are known to occur in the program area.

Response to Comment LA-1-50

The commenter states that the Draft PEIR should reference reports that provide estimates based on number of birds killed per turbine per year. As described in *Avian Fatality Analysis Methods* on pages 3.4-51 and 3.4-52 of the Draft PEIR, the number of birds killed per turbine is typically used at facilities using modern turbines. In this case, however, the Draft PEIR compares the baseline estimate of annual fatalities at existing turbines with the number of annual fatalities expected to occur after repowering. As disclosed in the Draft PEIR, the existing fatality rates are only available on a per MW basis, and thus the comparison for the PEIR must be undertaken on a per MW basis.

Please see also Response to Comment LA-2-18.

Response to Comment LA-1-51

The commenter correctly points out an inaccuracy in a discussion of the relationship between turbine size and turbine density. That discussion was intended to emphasize that as turbine size increases, the density of turbines decreases; this relationship makes use of the fatalities per turbine metric more sensible, although this approach is not feasible in the APWRA due to the historic disparity of turbine types and sizes. The second paragraph of *Avian Fatality Analysis Methods* on pages 3.4-51 and 3.4-52 of the Draft PEIR has been revised as shown below.

> The number of fatalities per MW per year has been used most often because it facilitates comparisons across a number of different turbine types with different sizes and rated nameplate capacities. However, the number of birds killed *per turbine* per year is being used more often at facilities using modern turbines because these larger turbines are reaching a size at which a higher density of turbines is no longer feasible. Consequently, the number of towers becomes relatively more important than the actual rated capacity. ~~While modern turbines may vary in rated nameplate capacity from 1 to 3 MW, their spacing is not closely correlated with their capacity because of various technical constraints. For example, a larger number of 1 MW turbines than 2.3 MW turbines cannot be installed in a given space, with the result that a given project, depending on its size, might support a roughly equivalent number of 1 MW or 2.3 MW turbines. Consequently, in view of their size and design, the number of turbines might be a more important factor than nameplate capacity in estimating fatality rates.~~

Response to Comment LA-1-52

The commenter states that data used to calculate baseline fatality rates should be updated with recently available information. Please see Master Response 3, *Avian Mortality Rates Methodology for Existing Conditions*, for a response to this comment.

Response to Comment LA-1-53

The commenter discusses fatality rates from repowered projects that were used to estimate potential impacts following repowering. Please see Master Response 4, *Estimated Avian Mortality Rates Methodology*, for a response to this comment.

Response to Comment LA-1-54

Potential Biases in the Avian Fatality Analysis Methods on page 3.4-53 of the Draft PEIR provides a description of the factors that have the greatest effect on avian fatality estimates. The commenter indicates that this discussion is incomplete because it does not discuss additional factors that could also potentially bias the estimates. A great many factors could potentially bias the estimates, but it is not necessary to describe them all as long as the factors that influence the rates to the greatest degree are discussed. The PEIR makes clear that the estimates of impacts are not precise, but estimates order of magnitude effects using the best information available, and discloses that that information is limited and potentially biased.

Response to Comment LA-1-55

The commenter indicates that each fatality rate in table 3.4-10 should include three significant digits and 95% confidence intervals. While 95% confidence intervals for baseline fatality rates are available, they are not available for all species from the Buena Vista project. There is considerable uncertainty regarding how 95% confidence intervals are calculated using the estimators currently available, and current methods almost certainly underestimate confidence interval width. Given this uncertainty and the clearly stated biases outlined in the document regarding fatality rate estimation, the County believes that including confidence intervals would lead to an erroneous perception of the precision with which these estimates are made.

The County chose a representative suite of species for detailed analysis and does not believe that an exhaustive treatment of all species is warranted. However, the analysis does address native non-raptors.

Response to Comment LA-1-56

Please see Master Response 1, *Baseline and Determination of Significance*, and Response to Comment LA-1-3 regarding the identification of the baseline for the analysis in the PEIR.

Response to Comment LA-1-57

The commenter indicates that the fatality rates used in the Draft PEIR are different than the fatality rates provided in the latest report from the Alameda County Avian Fatality Monitoring Team. The fatality rates in the Draft PEIR are from data that have been fully vetted and corrected. Moreover, these rates reflect the Alameda County portion of the APWRA, whereas rates in the latest Alameda County Avian Fatality Monitoring Team report reflect the entire APWRA.

Response to Comment LA-1-58

Please see Response to Comment NGO-1-3 for a response to this comment.

Response to Comment LA-1-59

Please see Response to Comment LA-1-15 for a response to this comment.

Response to Comment LA-1-60

Please see Response to Comment LA-1-46. The observation of risky behavior in prairie falcons does not change the conclusion that uncertainty remains regarding the effects of repowering on collision risk for this species because of the much smaller sample size on which to base conclusions about fatality rates.

Response to Comment LA-1-61

The commenter raises concerns regarding the continuation of the current program of on-call personnel who respond to reports of injured or dead raptors and other birds, and who transport animals to rehabilitation centers. The County notes that each operator is required to hold a valid Special Purpose Utility (SPUT) permit from USFWS to collect dead or injured birds at wind energy facilities. The requirements of the permits include requirements to report dead or injured birds found, as well as requirements to take injured birds to rehabilitation facilities. The County believes that USFWS is the primary agency with jurisdiction over dead and injured birds, and that the SPUT permit facilitates the required collection and rehabilitation of birds.

Response to Comment LA-1-62

The commenter raises concerns that the micro-siting analyses for individual wind projects as required in Mitigation Measure BIO-11b on page 3.4-104 of the Draft PEIR needs to be open and available for public review. Please see Response to Comment LA-1-16.

Response to Comment LA-1-63

Please see Master Response 5, *Avian Fatality Monitoring Methodology*, for revisions to the postconstruction monitoring protocols in response to comments on this topic.

Response to Comment LA-1-64

The County has developed a new approach for permitting and review of repowered projects as described in the Draft PEIR. The commenter suggests maintaining the current SRC approach. This is not a comment on the Draft PEIR, but it is in the public record and will be considered by the decision makers in taking action on the program.

Response to Comment LA-1-65

Please see Response to Comment FA-1-11 for a discussion of the suite of species addressed in the analysis of avian impacts. Mitigation Measure Bio-11h has been revised as shown in Master Response 9, *Avian Compensatory Mitigation*, to remove the option of contributing to raptor recovery efforts. The remaining conservation measure options will require either directly applicable research or conservation of land, which will benefit the full suite of species present in the APWRA. The compensation strategy for golden eagles is based on the REA conducted by USFWS for power pole retrofitting, which takes into account the loss of reproductive potential.

Response to Comment LA-1-66

The commenter suggests that compensation strategies should consider cumulative impacts of loss of individuals (e.g., loss of reproductive potential), especially for long-lived species such as golden eagle. The compensation strategy for golden eagles is based on the REA developed by USFWS, which takes into account the loss of reproductive potential, in developing mitigation levels for power pole retrofitting.

Response to Comment LA-1-67

The commenter makes several suggestions regarding the option to contribute to raptor recovery efforts through contributions to rehabilitation facilities. After careful reevaluation, the County has determined that this option is not an appropriate conservation measure because it would not benefit any species other than those raptors under the care of such facilities, and consequently it is inconsistent with the conservation approach outlined in Mitigation Measure BIO-11h. Accordingly, that option has been removed from Mitigation Measure BIO-11h as shown in Master Response 9, *Avian Compensatory Mitigation*; however, the per-raptor dollar value has been retained as a metric for determining the amount of contribution to conservation efforts as described in the subsequent option. The text of Mitigation Measure BIO-11h on pages 3.4-109 and 3.4-110 of the Draft PEIR has been revised as shown in Master Response 9, *Avian Compensatory Mitigation*.

Response to Comment LA-1-68

The commenter suggests some additional options regarding the regional conservation of raptor habitat outlined in Mitigation Measure BIO-11h beginning on page 3.4-106 of the Draft PEIR. The County appreciates the suggestions, but notes that the mitigation measure already allows for additional conservation measures that may become available in the future as described in the last bullet of the measure. However, the County has revised the last bullet of the mitigation measure on page 3.4-110 of the Draft PEIR as shown in Master Response 9, *Avian Compensatory Mitigation*, to include additional options suggested by the commenter.

Response to Comment LA-1-69

The commenter suggests modifications to the thresholds used in the EIR for implementing ADMMs. Please see Responses to Comments LA-1-70 through LA-1-73 for specific responses to these suggestions.

Response to Comment LA-1-70

The commenter suggests that thresholds should be applied to individual species rather than groups of birds so that mitigation can be tailored to individual species. However, the mitigation measures set forth in the Draft PEIR apply to all raptors killed and would benefit all bird species using the APWRA.

Response to Comment LA-1-71

Please refer to Master Response 10, *Adaptive management*, for a response to this comment.

Response to Comments LA-1-72 and LA-1-73

The commenter expresses concerns about the trigger for turbine curtailment and the efficacy of real-time turbine curtailment. The County agrees that implementation of this measure may be difficult using today's technology; however, technology may become available in the future to make the measure feasible. Please see Master Response 10, *Adaptive Management*, for revisions to Mitigation Measure BIO-11i.

Response to Comment LA-1-74

The commenter suggests that the County should provide further information regarding the proposed mitigation payment described in ADMM-3 in Mitigation Measure BIO-11i on page 3.4-111 of the Draft PEIR. The amount described in ADMM-3 was the same amount described in the Draft program-level APP, which was reviewed by the stakeholders. Mitigation Measure BIO-11i has been revised as shown in Response to Comment FA-1-23 to allow the County to modify the ADMMs to take into account current research and the most effective impact reduction strategies. Consequently, the mitigation measure allows the County to revisit the amount in the future as necessary.

The commenter also questions whether the payment is adequate for cumulative impacts on golden eagles. As disclosed in Response to Comment FA-1-6, the County believes the golden eagle cumulative impact situation in the APWRA will improve following repowering. The County has still found the impact on golden eagles to be significant and unavoidable as described in Master Response 1, *Baseline and Determination of Significance*, and Mitigation Measure BIO-11h requires each project to compensate for the loss of each golden eagle through a combination of mitigation measures.

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SRC Comments on Draft Repowering Program Environmental Impact Report

Alameda County APWRA Scientific Review Committee

I. SRC Consensus Input

The Alameda County Scientific Review Committee (SRC) developed its consensus input on the Draft Repowering Program Environmental Impact Report (DPEIR) at a July 9, 2014 conference call meeting. The SRC, after reviewing comments made by individual SRC members in an earlier version of this document, agreed to endorse all of the individual comments as input on the DPEIR. Alameda County (in P285_Alameda County Memo on Questions for Repowering DPEIR Review) had asked the SRC to provide input on the report's methodology, assumptions and proposed mitigations in reference to avian biological resources.

While individual SRC member comments covered a broad range of subjects in the PEIR, there were several broad issues that the SRC agreed were of particular importance in revising the PEIR:

Analysis/Assumptions

- **Project Baseline:** The data used to derive the baseline could lead to a higher baseline than the estimates from more recent years. Also there is an issue of impacts below baseline being considered less than significant, despite the potential for significant avian fatalities occurring. 1
- **Selected avian species for impact analysis:** It is not clear why certain species, aside from the four focal species, are the focus of impact analysis, and the broad coverage of the Migratory Bird Treaty Act (MBTA) and other laws and regulations should be noted. 2

Mitigations

- **Specificity or strengthening of certain mitigation requirements suggested.** Field surveys, biological monitors, seasonal/breeding protections are areas that need more specific requirements. 3
- **TAC composition and role.** Participation of independent scientists and NGOs is highly recommended. Several qualified and independent scientists should be engaged to provide input throughout the life of the TAC. 4

1

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II. Comments by Individual SRC Members

Comments submitted by individual members of the Alameda County Scientific Review Committee (SRC) prior to the conference call meeting are as follows:

Chapter 2 - Program Description

5

The program objectives are ambiguous. Page 2-2 contains a section (2.2.2) titled "Program Objectives" and describes them as such:

> "The two primary objectives of repowering are to facilitate efficient wind energy production through repowering and to avoid and minimize impacts on terrestrial and avian wildlife caused by repowered wind turbine construction, operation, and maintenance."

The objectives were restated on page 4-2 (section 4.1.2) in such a way that separates the term "repowering" out of the program objectives:

> "the two primary objectives of the program are to facilitate the replacement of existing wind energy turbines with more efficient turbines, increase energy production, and avoid and minimize impacts on avian wildlife caused by repowered wind turbine construction, operation, and maintenance in the program area."

Is repowering not an integral program objective? This relates to whether the "No Repowering, Full Decommissioning" should be considered as an environmentally superior alternative among the no-project alternatives. It is not treated as the "No Project" alternative and it will not achieve the objective of repowering, yet it is designated in the draft as the environmentally superior (Page 4-34).

Chapter 3-4 - Biological Resources

3.4.1 Existing Conditions

6

Page 3.4.1: It might be good to have a comparison of APWRA instead of just the program area. This would indicate the relative importance of different habitats. In all of these tables, percents could be added to make comparisons easier.

7

Page 3.4-7, last paragraph: The paragraph references a draft Avian Protection Program (APP) and states that key provisions have been incorporated into the draft PEIR. It would be useful to see the APP in its entirety in order to make a full evaluation of the PEIR. The origin of provisions in the PEIR that are associated with the APP are likely to be unclear.

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Page 3.4-10, Common Wildlife Associations (Grasslands): Grasslands are the dominant land cover type in the APWRA and the primary foraging habitat for raptor species. While this section discusses the general association of grasslands and various wildlife species, it might be useful to expand the discussion to include the landscape features and other environmental factors that concentrate bird use or that affect bird movements and behavior. These are the things that are related to bird mortality in the APWRA and for which some background discussion would be helpful to many readers. For example, eagle movement is directly related to topography through the grassland landscape. Topography is also a key factor in the siting of turbines. As eagles move through the grassland landscape using topography and low elevation flight to surprise prey, they may encounter turbines and become susceptible to collision. The repowering of the APWRA will not alter eagle behavior or movement or the grassland landscape they use, but it will alter the turbine landscape and potentially reduce encounters with turbines. Other factors worth noting are wind patterns through the APWRA and how they can concentrate bird activity or determine bird behavior and affect susceptibility to collision. Rock outcrops (also described in the grassland section) may concentrate rodent prey, particularly ground squirrels, and also affect local bird abundance and behavior. These are examples of how the discussion of wildlife associations can be more relevant to the project rather than simply associating species with habitats. 8

This same comment applies to all of the natural communities described. A bit more discussion of the relationships of habitats, habitat elements, and related ecological factors to wildlife species use, abundance, and behavior and how these are associated with the project and its impacts would be helpful to the uninformed reader of the draft PEIR.

Special-Status Wildlife

Page 3.4-24: There are a few minor inconsistencies between the species included on Table 3.4-5 and those that are described in the text. While not included on Table 3.4-5, the text includes several species that are typically not considered 'special-status', such as red-tailed hawk, American kestrel, barn owl, and prairie falcon. These non-special-status species appear to be included by virtue of them being protected under the MBTA or DFG Code. However, all native birds receive some protection under these regulations. So, it might be useful to make this point – particularly since the primary issue with repowering and this PEIR is avian mortality. Consider making it clear which birds have actual special-status, describe how all native birds receive protection under state and federal laws and regulations, and describe the significance of this distinction. 9

There is also the use of the term "APWRA focal species" in the species descriptions. If this refers to the species addressed in the monitoring program, then prairie falcon, barn owl, and loggerhead shrike are not focal species. If there is another reason why these species are referred to this way, then this should be made clear.

3

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Birds and Bats Subject to Turbine-Related Mortality

Avian Mortality and Monitoring

Page 3.4-45, second paragraph: The second sentence notes that mortality reduction due to implementation of the two primary management actions is less than 'predicted'. To be clear, no predictions were made regarding the extent of mortality reduction. This implies that there were some data or other sources of information that might be used to calculate a potential reduction, which there were not. A mortality reduction was assumed, but the extent of that reduction was not calculated or predicted. The 50% reduction goal was a target established by the Settlement Agreement. It was not a prediction. 10

This section might also point out the extent of turbine attrition that has occurred since the monitoring program has begun, which likely also contributed to the reduction in mortality.

Page 3.4-46: Overall it would be good to consider all migratory birds, not just a focus on raptors (or the focal raptors). 11

Bat Fatality and Monitoring

Page 3.4-46, fourth paragraph: While there is a somewhat vague reference to it in the last sentence, this section might provide a more complete description of bat mortality at new generation turbines. There are quite a lot of data on bat mortality at larger new generation turbines and the potential for mortality from both collision and changes in air pressure. The low mortality at the older APWRA turbines may not be surprising due to their size, lack of lighting, and more localized changes in air pressure compared to the larger turbines. It would be useful to describe this distinction and these differences. 12

3.4.2 Environmental Impacts

Methods for Analysis

Page 3.4-47, Table 3.4-6: The comparison between the sites is a bit unclear unless you refer to the footnotes. And even then, most readers may not be clear on how to compare MW relative to the number of turbines. To be clearer, consider including the MW totals and the number of turbines for each site within the table itself – following the title of the project (e.g., APWRA Monitoring – 417 MW [# old generation turbines]; Buena Vista Repowering Project – 38 MW [# new generation turbines]; Vasco Winds – 78 MW [#new generation turbines]), or something similar to enhance clarity. Also, the table suggests the differences between new and old generation turbines, but there is no accompanying text to describe this. 13

4

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Avian Fatality Analysis Methods
Fatality Rates

Page 3.4-51: There is a need to present fatalities BOTH by MW and turbine (as well as type). 14

Page 3.4-52, fourth paragraph: The baseline estimates were determined as follows: "For the fatality rates, the average of the annual estimates of each fatality rate from the 2005–2011 bird years (n=7 years) provided by the Alameda County Avian Fatality Monitoring Program (ICF International 2013) was based on old-generation turbines only (i.e., results from the Diablo Winds and Buena Vista turbines were excluded because they are not considered old-generation turbines. This average was used because the annual fatality rates vary considerably from year to year." 15
Comment: Because you have chosen to use the 2005-2011 monitoring years to derive the baseline estimate, the fatality rates for some of the focal species will likely be higher than if you used the more recent monitoring years. Your method does not take into consideration the reduction in fatalities in the later monitoring years, presumably due to the management actions taken. Those seven years also include the anomalously high 2006 year. In addition, the baseline calculation also uses the installed capacity at the time of the NOP, which is lower than previous years and thus further increases the baseline estimate. Consequently, these baseline analysis methods will make it easier for post-construction monitoring data not to exceed baseline. It may be more appropriate to use the average of the last 3 years as the baseline, because it would include the effects of management actions and better represent existing conditions. The 3 year average is also what the Monitoring Team uses to compare to its baseline. At least mention this as a bias in the PEIR.

Page 3.4-52, fourth complete paragraph and Table 3.4-10 on Page 3.4-53: It is unclear why the other (non-focal) species were selected to represent differences in fatality rates. These are not the most representative birds that are subject to mortality in the APWRA. For example, Table 3.4-10 indicates very few Swainson's hawk and prairie falcon fatalities. So then why use these species? The APWRA is generally outside the range of the Swainson's hawk, so its conservation status may not be a reasonable rationale for including it here. 16

Page 3.4-52, last paragraph: The last sentence states that 95% confidence intervals are included in Table 3.4-10. They are not. 17

Page 3.4-52: Suggests returning to fatalities per turbine rather than per MW, but then presents data as fatalities per MW; needs clarification of metric(s) to be used following repowering. 18

5

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Page 3.4-52: Should review and discuss any fatality data from other WRAs with new generation turbines and fatality rates; anything useful such as relative to old gen turbines in the literature including unpublished reports? 19

Potential Biases in the Avian-Fatality Analysis Methods

Page 3.4-54, second paragraph, fourth sentence: "The Alameda County Avian Fatality Monitoring Program measured detection probabilities in only one year, and these probabilities were used to estimate the number of killed birds in all years of the study." **Comment:** In the last few years of Alameda County Avian Fatality Monitoring Program, a composite of three different detection probability methods have been used to estimate APWRA-wide annual fatalities across all years of the study. Detection probabilities were estimated using data collected during the QAQC study, the carcass removal/scavenging trail study, and the 48-hour search interval study. A QAQC approach to detection probabilities for future monitoring of repowered turbines would more accurately estimate fatalities and improve comparability to the current study (baseline). 20

Page 3.4-54, second paragraph, fourth sentence: Some type of integrated detection probability study design conducted concurrently with monitoring, such as that used at the Vasco project, would be even more preferable to relying on Alameda County Avian Fatality Monitoring Program detection probabilities developed through the previous QAQC study. 21

Page 3.4-54: One additional potential bias should be mentioned: search radius. There are different search radius is for larger turbines, and the literature about appropriate search radii is uncertain. There is a potential for an unknown bias. 22

Bat Fatality Analysis Methods

Page 3.4-54: In the preceding section on bird fatalities, the statement is made that bird fatalities may decline with increasing size of turbines. There is also evidence that bat fatalities may increase with increasing turbine size. While perhaps somewhat more speculative, it seems this section, to be consistent with the preceding section, should at least note this possible relationship and provide the appropriate citations.
In the bat impact assessment on page 3.4-127, the statement is made that "all available data suggest that repowering would result in a substantial increase in bat fatalities". So it is acknowledged in the document, but to maintain consistency, the analysis methods section should address bats similarly to birds. 23

Determination of Significance

6

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Page 3.4-55: The analysis establishes a baseline using monitoring data from 2005 to 2011 and uses this baseline as the threshold for determining significance ("Where the projected rate would exceed the baseline rate, the impact would be significant; if the projected rate is below the baseline rate, the impact would be considered less than significant"). 24

Understanding the CEQA logic and rationale related to establishing a baseline that differentiates the 'existing condition' from the 'project condition,' there are two issues with it in this case.

First, the baseline condition is one that results in substantial annual bird mortality from operation of the turbines, including protected species, and violates state and federal law. Dropping the level of avian mortality below this baseline threshold may still result in substantial annual bird mortality and continue to violate state and federal law. It's difficult to resolve how this (a continuing high level of avian mortality – including protected species) would be considered a less-than-significant impact. It may drop below the baseline, but it still may not satisfy the CEQA definition of significance. While the ultimate determinations are considered significant and unavoidable (e.g., Impact Bio-11a-1) due to the range of projected mortality reductions and the possibility of not dropping below the baseline threshold, the rationale for using the baseline may not be appropriate.

The existing condition in APWRA can be reduced to zero turbine-related mortality simply by flipping a switch and shutting down the turbines. So it isn't quite the same as a change in the physical landscape from a development project or construction of a dam or similar condition. It seems like the baseline for the taking of animals from operation of a project that otherwise doesn't substantially alter the physical landscape should be based on the effect of that operation on those animal populations rather than accepting a high level of mortality as the existing condition and the threshold for determining significance. In other words, because the impact is the operational-related mortality of birds and bats, mortality that is below the baseline may still constitute a significant biological impact as defined in CEQA.

So in general, the ultimate conclusion that while repowering will likely reduce overall avian mortality, turbine-related mortality could still be significant and unavoidable following repowering is supported. The concern is with the rationale used to develop the significance threshold (i.e., baseline mortality).

Secondly, the baseline uses data (2005-2011) that precedes some management designed to reduce mortality. The existing condition for which the baseline is established no longer exists. It seems more appropriate to use a more recent and up-to-date estimate of mortality to establish the baseline. However, as noted above, it is not convincing that the approach is entirely valid in the first place.

7

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Page 3.4-55, first paragraph, fourth sentence: "Where the projected rate would exceed the baseline rate, the impact would be significant; if the projected rate is below the baseline rate, the impact would be considered less than significant."
Comment: Although it was unlikely the intention, this sentence gives the impression that the existing baseline fatality rates are below the level of significance. There are also several other places in the PEIR that define significance as being greater than the baseline fatality rates. Actually, by any interruption of the existing fatality data, the level of non-significance has not been reached in any of the eight years of monitoring. The original goal of a 50% reduction in fatalities has not been reached and even if it were, that level of mortality may still be considered significant by many biologists. Perhaps a clarification of this in the text would be appropriate. 25

Perhaps this is detailed elsewhere in the PIER, but a clearly defined "baseline" fatality rate must be established. The PIER talks about violating the baseline and the consequences of doing so. However, a thorough development of how the baseline is established, the metric used (fatalities per turbine or per MW), and correction factors or other changes to the baseline permissible based on future information on causes of fatalities. The metric is critical as well as the variability around the value (e.g., variance) that will lead to the determination of violating (exceeding) the baseline.

Impacts and Mitigation Measures

Page 3.4-57 BIO-1b: Insufficient details on how direct and indirect disturbance (and take) of animal species (including those protected by MBTA) will be avoided. For example, seasonal limitations during breeding seasons? 26

Page 3.4-58: It would be useful to present data, such as table 3.4-10, for some other species besides raptors. In that same vein, is there a need to assess bird mortality at different distances from the new repowered turbines (both from studies, and as part of monitoring)? Further assessing effects should encompass examining before, during and after putting in new turbines. A biological monitoring person should be available during all these phases to asses potential injury, and to suggest ways to mitigate or reduce such effects. 27

Page 3.4-59 BIO-1e: Mentions a biological monitor present during all construction activities, but vague on intensity of survey work (says "periodic"); this needs to be specific such as initial (prior to an activity) and follow up (e.g., weekly) surveys. Here and elsewhere discusses "sensitive species" but does not elaborate on what these include; again need to reference MBTA. 28

Page 3.4.62: Special attention needs to be devoted to invasive plants because of the high potential for seed dispersal during construction and routine monitoring. 29

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Monitoring for invasive plants needs to be conducted on a regular basis as part of the monitoring scheme. 29 cont.

Page 3.4-63 BIO-3a: Addresses field surveys for the habitat of all species status <3 years prior to activities. This is a very weak requirement unless followed by appropriate field surveys for the presence of the species closer to the time of construction. This is because "habitat" is difficult to quantify with accuracy unless the species of interest are determined to be present or absent. It is appropriate for an initial evaluation of potential species presence. 30

Page 3.4-64, Mitigation Measure BIO-1bc: Documenting special status species is an on-going activity, and special care should be given to designing the protocol to include all yearly and seasonal variation. 31

Page 3.4-66: Again, with changing climate, it is critical to continue to monitor and develop best management practices to avoid impacts to special status animals, as both physical and biological conditions will change, as well as bird populations within the APWRA. 32

Page 3.4-74: Special care should be mandated for reclaiming roads, as this restoration project has the potential to greatly introduce invasive species. Such projects should be timed to avoid sensitive breeding/migration times for herps and birds. 33

Page 3.4-85 BIO-8a: The distance from construction activities will not avoid disturbance to nesting raptors (500 feet) or other birds (50 feet) based on buffers used elsewhere by various agencies. For example, the USFWS has used 300 feet for some endangered songbirds, and uses a much farther distance (e.g., 1 mile or more) for raptors. 34

Overall comment: the document does not review or justify the distances proposed for exclusion zones and buffers. The literature, including agency reports and standards, need to be cited as justification for all proposed guidance

Page 3.4-85: It should be noted that the Migratory Bird Act protects all migratory species, not just the list or special concern species. Sufficient monitoring before construction is essential to identify sensitive times for migrant species. 35

Page 3.4-86: While some tree removal is essential, the concept of just removing them when birds are not present may not sufficient if some birds DEPEND upon these habitat features for nesting, particularly for sensitive species. 36

Page 3.4-86 BIO-8b: Discusses re-locating non-breeding BUOW but nothing about constructing new burrows; where will birds be relocated? Also, what about destroying burrows in non-breeding season that would have been used in breeding? 37

Page 3.4-88-9: It is essential to have a reasonable "breeding season" time period so that it includes territory establishment and the post-fledging period for sensitive species. 38

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Page 3.4-89 BIO-9: Calls for mitigation for loss of owl breeding habitat but does not specify the type of mitigation site. For example, preserving already occupied but not permanently protected areas; or relocating owls to currently unoccupied areas? Also, no discussion of mitigation ratios (i.e., 2:1; 3:1?) and follow on monitoring. 39

Page 3.4-98, Impact BIO-11a-1: This section, consistent with the description in the Existing Conditions section focuses primarily on 8 species. Given the long list of birds that have been subject to collision-related mortality, it makes sense to focus on a representative sample. However, in doing so, the reader may not be fully informed about the extent of mortality that has occurred. Including the focal species used by the ongoing monitoring effort makes sense, but its not clear that the other species are the most representative. It is suggested that this sample be reevaluated to select those that are most representative of the issue and not rely on species' legal or conservation status as a primary factor. Also more fully describe (relative abundance and fatality rates) the birds that are lumped under 'all native non-raptors'. 40

Page 3.4-100, Impact BIO-11a-1: Although a minor point, it is unlikely that managing rock piles and some perches will reduce prey for kestrels (which forage largely on insects and lizards). 41

Page 3.4-100: The wide range in predicted kills for burrowing owls further indicates the need for a very rigorous monitoring program and carefully evaluation of analytical methods and results by the TAC. 42

Page 3.4-101: The G. Hunt research is now approaching 10 years (or more) old and, while relevant to cite, cannot be sued to represent the current status of the eagle population. 43

Page 3.4-103: The 'decreasing" trends in red-tail fatalities claimed is not supported by the actual data; needs re-evaluation. 44

Page 3.4-104: **Mitigation Measure BIO-11a: Prepare a project-specific avian protection plan** 45

Page 3.4-104: The components and utility of an APP should be more fully described.

Page 3.4-104: Design of a project specific avian plan is a great idea, but the composition of any group that does this should have some specificity with respect to qualification.

Page 3.4-104: No plan to remove hazardous turbines or seasonal shutdown thereof? 46

Mitigation Measure BIO-11b: Site turbines to minimize potential mortality of birds 47

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Page 3.4-104: Micro-siting of turbines - using analyses of landscape features and location-species bird use and behavior data to identify locations with reduced collision risk—may result in reduced fatalities (Smallwood et al. 2009). All project proponents will use the best information available to site turbines to reduce avian collision risk: avian use of the area; topographic features known to increase collision risk (trees, riparian areas, water bodies, and wetlands); and the latest models of collision risk."
Comment: It would be useful to cite the SRC's siting guidelines.
Alameda County SRC (Smallwood, K. S., S. Orloff, J. Estep, J. Burger, and J. Yee). 2010. 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.

47 cont.

For the average reader, this measure may not provide sufficient information or assurances that siting will actually achieve anything. While each turbine should be sited independently according to its particularly surroundings, there is guidance that provides specific measures that have fairly universal application. For example, the SRC guidance document includes measures regarding avoidance of steep slopes, saddles, and other topographic features. Perhaps this measure can provide more specific guidance.

Mitigation Measure BIO-11c: Use turbine designs that reduce avian impacts 48

Page 3.4-104: This measure really doesn't constitute 'mitigation'. These turbine design features are already incorporated into new generation turbines and wind energy facilities.

Page 3.4-104: Retrofitting existing power lines and such should take into consideration any birds that traditionally get caught in them. 49

Page 3.4-104: The Curry and Kerlinger (2009) report used to support the blade height standard was conducted in Solano County and, while relevant to cite, does not present a complete evaluation of available data and literature. 50

Page 3.4-105, Mitigation Measure BIO-11d: This measures reads more like a project description than a mitigation measure. These things are also already universally applied to wind facilities in California. 51

Page 3.4-105 BIO-11f: The prohibition of rodenticides is a positive requirement to protect raptors and other predators. However, allowing rock piles in close proximity (200 yards) of turbines does not adequately minimize the raptor-turbine risk. Rocks (as defined in the document) should be removed farther (~500 m) from turbines to eliminate any concentration of potential prey near turbines. 52

Mitigation Measure Bio-11g: Implement post-construction avian fatality monitoring for all repowering projects *[includes TAC]* 53

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Page 3.4-106: Include conservation organizations and natural resource trustees in a way that ensures participation. In many cases, such people are overworked, underpaid, and have little time. So their input is harder to get than that of companies (whose personnel are paid to attend such meetings). The state wildlife people should be involved, as should independent scientists (those not working for regulatory agencies, companies, or state government. The voluntary nature may preclude some people that are necessary to the process. Further, there should be some independent scientists involved – people who have no stake in the outcome or do not have agency directives. 53 cont.

Need to define timely with respect to monitoring reports. Such reports must be available in time to make reasonable decisions. Without timely reports, it is impossible to have adaptive management or respond quickly enough.

Consider adding a section on conservation measures for species other than raptors. We may someday find ourselves with a need to protect some specific group (e.g. Neotropical migrants or such), and need to have considered options. Without monitoring information on non-raptor species, it is difficult to develop conservation strategies.

Page 3.4-106: The key for the TAC to be successful is for the County to retain several (one is insufficient) scientists who are experienced in wildlife ecology, study design, and the wind industry. As stated the TAC is not a "decision making" body; hence it is critical that the County receive consistent and independent advice. Input from agency, NGO, and industry TAC members is important, but specific individuals will certainly change over even short periods of time. 54

Mitigation Measure BIO-11h: Compensation for the loss of raptors, including Golden Eagles, by contributing to conservation efforts 55

Page 3.4-107: need specific requirements for review and approval of actual fatality surveys, planned analyses, etc.

Page 3.4-107: What is the rationale for limiting this mitigation measure that addresses conservation efforts to raptors? 56

Conservation Measures

Page 3.4-108, Conservation Measures, second paragraph: How does the Raptor Mitigation Plan differ from the Avian Protection Plan required under BIO-11a? 57

Page 3.4-110 BIO-11i: Adaptive management plan—is very good that thresholds and triggers are mentioned. However, the proposed actions have little or no literature support as being effective, including painting blades and removing perching options (perching options were already removed from the new turbines). Using money for research ($2K/death) is not mitigation, and will be unlikely to build up to a useful amount. 58

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Threshold 3—starts to get to likely effective actions but only ADMM-4 could be effective short of actual turbine removal. 59

Page 3.4-112 ADMM-6: Real-Time Turbine Curtailment: "If the above measures prove ineffective, then the project proponent will employ a real-time turbine curtailment program designed in conjunction with the TAC. The intent is to deploy a biologist to monitor onsite conditions and issue a curtailment order when raptors are near operating turbines." 60
Comment: This seems like it would be impossible to implement. First of all you would really need several biologists not just one to cover the entire area. Second, by the time the raptor is observed in close proximity to an operating turbine, operators notified, and then turbines shut down, the raptor would likely be gone.
It may be more beneficial to examine the prey base around the more hazardous turbines and implement a prey reduction program around the offending turbines.

Page 3.4-113: Again, it would be useful to add some non-raptors to the table, especially those that have high collision rates. 61

Page 3.4-127 BIO-14b: Suggestions to restrict bat fatality surveys to roads and pads is unacceptable unless it is first indexed against a proper (all ground cover) surveys. Additionally, the acoustic sampling guidelines referenced are now >8 years old and need to be revised to match current technology. 62

Page 3.4-129 BIO-14d: While it is difficult to know the proper actions for bat fatalities, the document should default to those known to be effective (and logical) for birds such as seasonal shutdown of known hazardous turbines. 63

Page 3.4-130, ADMM-7: Seasonal Turbine Cut-in Speed Increase, first paragraph. 64
There are conclusive data to support the reduction in mortality from an increase in cut-in speeds. There are now several studies that have been completed that clearly indicate this relationship. While increasing cut-in speed from the typical 3.5m/s to 5.0m/s will reduce power generation, this reduction and the associated economic impact has been shown to be fairly minimal.

First bullet: Studies have shown that increasing cut-in speed above 5.0 m/s is ineffective. If substantial mortality continues following the increase to 5.0, then experimentation with other cut-in speeds is warranted. But the document should more fully describe what is already known about the effect of increasing cut-in speed.

Chapter 4 - Alternatives Analysis

Why is the no project alternative this: ***No Repowering, Reauthorization of Existing CUPs***, and not this: ***No Repowering—Full Decommissioning***? Would the status quo be that the current turbines will be decommissioned if not repowered? 65

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Page 4-18, 4.1.6: If repowering is an integral program objective, then how is it that the first two alternatives, which specifically state no repowering, are not automatically eliminated on Page 4-18 in the section (4.1.6) to eliminate alternatives that do not meet the program objectives? 66

Other Comments

Legal issues: Needs a discussion of how federal agencies, especially USFWS, could deal with violation of MBTA. MBTA will be technically violated because songbirds will be directly killed, and nests will be destroyed unless specific steps are taken to avoid. 67

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E.4.2 Comment Letter LA-2—Alameda County APWRA Scientific Review Committee

Response to Comment LA-2-1

Please see Master Response 1, *Baseline and Determination of Significance*, for a detailed discussion of the rationale for the baseline and significance criteria. Please see Master Response 3, *Avian Mortality Rates Methodology for Existing Conditions,* for a discussion of the selection of data to establish baseline fatality rates.

Response to Comment LA-2-2

The commenter states that the selection of species for the avian impact analysis is not clear in the Draft PEIR. Please see Master Response 7, *Migratory Bird Treaty Act*, for a discussion of the selection and presentation of species in the impact analysis. The commenter also states that the coverage of the MBTA and other laws and regulations should be noted. A discussion of the regulatory setting, including the MBTA and other laws and regulations pertaining to biological resources, appears on pages 3.4-1 through 3.4-7 of the Draft PEIR.

Response to Comment LA-2-3

This comment is a part of a summary of SRC's comments. Please see responses to individual comments provided by this commenter below.

Response to Comment LA-2-4

The commenter suggests that participation of independent scientists and nongovernmental organizations is highly recommended for the TAC. Please see Master Response 6, *Technical Advisory Committee*, regarding the TAC.

Response to Comment LA-2-5

The commenter correctly questions why the program objectives presented in Chapters 2 and 4 of the Draft PEIR differ slightly. This is an editorial error. The text in Section 4.1.2, *Project Objectives*, on pages 4-2 and 4-3 of the Draft PEIR has been revised as shown below.

> As described in Chapter 2, *Program Description*, the two primary objectives of the program are to facilitate efficient wind energy production through repowering ~~the replacement of existing wind energy turbines with more efficient turbines, increase energy production,~~ and to avoid and minimize impacts on terrestrial and avian wildlife caused by repowered wind turbine construction, operation, and maintenance in the program area. The specific program objectives are listed below.
>
> - Allow for appropriate and compatible repowering and operation of wind turbines consistent with existing repowering timeline requirements set forth in the existing CUPs, related agreements, and project-specific power purchase agreements~~2005 CUPs and applicable laws~~.
> - Reduce avian mortality caused by wind energy generation in the program area through repowering.
> - Meet the County's goals to provide environmentally sensitive, clean-renewable wind energy for the twenty-first century as identified in the ECAP (Policies 168–175 and Programs 73–76)~~*East County Area Plan* (Policies 168 through 175 and Programs 73 through 76)~~.

- Help meet the Governor's Executive Order S-14-08 in meeting the Renewables Portfolio Standard (RPS) target that all retail sellers of electricity serve 33% of their load with renewable energy by 2020.
- Contribute to state progress toward air quality improvement and greenhouse gas emission reduction goals, as set forth in Assembly Bill 32.
- Improve habitat quality in the program area through removal of roads and existing wind turbines and their supporting infrastructure, resulting in lower overall operational footprint, and providing a wide range of habitat benefits to sensitive terrestrial and avian species.

Response to Comment LA-2-6

The APWRA footprint is compared to the proposed program area boundary in Figure 1-2 of the Draft PEIR. Please also see Master Response 2, *Program Area Boundary*.

Response to Comment LA-2-7

The commenter states that it would be useful to see the program-level APP in its entirety in order to make a full evaluation of the Draft PEIR. Please see Master Response 8, *Avian Protection Plan*, regarding the APP.

Response to Comment LA-2-8

The commenter requests that additional detail be included in the description of natural communities in *Environmental Setting*, beginning on page 3.4-7 of the Draft PEIR. Specifically, the commenter requests that landscape features associated with the natural communities be discussed, noting how these features affect bird use and the potential risk of turbine-related mortality. While the request for greater scientific rigor is appreciated, the County feels that the comprehensive suite of mitigation measures and the adaptive management strategy adequately consider the local variations than can arise as individual projects are conceived, designed, and subjected to environmental review. Specifically, Mitigation Measure BIO-11b on page 3.4-104 of the Draft PEIR specifies considerations to be taken account during siting of turbines.

Response to Comment LA-2-9

The commenter correctly points to confusion regarding the inclusion of non-special-status species with special-status species in the species-specific discussions in *Special-Status Wildlife* beginning on page 3.4-24 of the Draft PEIR, as well as the addition of four focal species. The definition of *Special-Status Species* on pages 3.4-20 and 3.4-21 has been broadened to include "APWRA Focal Species" and "Species of Local Conservation Concern in the APWRA" as shown in Response to Comment LA-1-39. The latter category comprises the four species that have been added to the species-specific discussions in the analysis.

Response to Comment LA-2-10

The commenter notes that the discussion of avian mortality and monitoring includes an incorrect characterization of the mortality reductions from two primary management actions. In response to this comment, the County has changed "predicted" to "expected" in the second paragraph of *Avian Mortality and Monitoring* on page 3.4-45 of the Draft PEIR. The revised text is shown in Response to Comment FA-1-9.

Response to Comment LA-2-11

The commenter suggests that the discussion of avian fatalities be expanded to include all species of birds that have been taken by windfarm operations in the APWRA. As stated in Response to Comment LA-1-47, all bird species are included in the analysis; however, they are summarized into raptor and non-raptor categories, rather than addressed as individual species. Please see Response to Comment FA-1-11 for more information.

Response to Comment LA-2-12

For a response to this comment, please see Master Response 11, *Bat Impacts and Mitigation*.

Response to Comment LA-2-13

The commenter states that Table 3.4-6 on page 3.4-47 of the Draft PEIR is unclear and suggests changes. The commenter's assertion is that the purpose of the table is to compare the number of MWs to the number of turbines and that additional changes to the table are necessary to make that purpose clear. As described in the fourth paragraph of the *Bat Fatality and Monitoring* section on page 3.4-46 of the Draft PEIR, the purpose of the table is simply to list the species of bats that have been recorded as fatalities at various project sites, not to compare sites or assess impacts following repowering. The County believes the table accomplishes this purpose. No change is required.

Response to Comment LA-2-14

Please see Responses to Comments LA-1-50 and LA-2-18 for a response to this comment.

Response to Comment LA-2-15

The commenter provides notes regarding the calculation of the baseline fatality estimates in the Draft PEIR and suggests a change to the calculation. Please see Master Response 3, *Avian Mortality Rates Methodology for Existing Conditions*, regarding this comment.

Response to Comment LA-2-16

The commenter states that the selection of species for the avian impact analysis is not clear in the Draft PEIR. Please see Master Response 7, *Migratory Bird Treaty Act*, for a discussion of the selection and presentation of species in the impact analysis.

Response to Comment LA-2-17

The commenter points out that 95% confidence intervals are not included in Table 3.4-10 as stated in the seventh paragraph of *Avian Fatality Analysis Methods* on page 3.4-52 of the Draft PEIR. The County notes that presenting the confidence intervals is not significant to the analysis of potential impacts. The paragraph has been revised as shown below.

> ICF biologists compared the baseline number of fatalities for each species and species group calculated as outlined above to the number of fatalities expected to occur as a result of repowering. The number of fatalities expected to occur as a result of repowering was based on the 417 and 450 MW caps for the two program alternatives and on the size of each of the projects measured in MWs as outlined in the project description. The rates used to calculate the number of fatalities expected to occur as a result of repowering were derived from the rates at three repowering projects in the

APWRA that use newer, repowered turbines: Diablo Winds, Buena Vista, and Vasco Winds. Diablo Winds comprises thirty-one 660 kW turbines, Buena Vista thirty-eight 1 MW turbines, and Vasco Winds thirty-four 2.3 MW turbines (Insignia Environmental 2012; Brown et al. 2013; ICF International 2013). Although there is considerable range in turbine sizes among these three projects, they are all considered new-generation turbines relative to the rest of the turbines installed in the APWRA. The annual fatality rates (expressed as fatalities per MW per year) for these three repowering projects are presented in Table 3.4-10 ~~(with 95% confidence intervals where available)~~, along with the average of the annual fatality rates at nonrepowered turbines for comparison. However, it should be noted that the rate estimates available from new-generation repowered turbines in the APWRA may not be representative of rates that would occur at other locations in the APWRA. This is because the three existing repowered project sites each have different turbine types and are located in three relatively small, distinct areas with site-specific geographic, topographic, and other ecological conditions, and because the primary species of concern are not evenly distributed throughout the APWRA.

Response to Comment LA-2-18

The commenter notes that the Draft PEIR suggests returning to fatalities per turbine rather than per MW, but then presents data as fatalities per MW. The commenter also suggests that clarification is needed regarding the metric(s) to be used following repowering. Pages 3.4-51 through 3.4-54 of the Draft PEIR describe the avian fatality analysis methods used in the PEIR to assess impacts of repowering. The discussion is not meant to apply to the metrics used to assess the results of future repowering projects. The Draft PEIR describes the different metrics that can be used to assess impacts, but concludes that for this analysis, a per-MW basis is the most appropriate because of the wide variations in turbine types between old- and new-generation turbines. Additionally, the County believes it may be appropriate to consider the impacts of repowered projects on a per-turbine and/or per-MW basis. As described in Mitigation Measure BIO-11g beginning on page 3.4-106 of the Draft PEIR, monitoring and reporting on future repowering projects is required. A TAC, made up of resource agency representatives and other experts, will review proposed monitoring protocols and reports and may suggest the appropriate metrics to use at that time; the TAC could recommend using estimates on a per-MW and/or a per-turbine basis.

Please see also Response to Comment LA-1-50.

Response to Comment LA-2-19

The commenter states that the PEIR should review and discuss any fatality data from other WRAs with new generation turbines and fatality rates. The County believes that the APWRA is unique and that attempting to compare it with other WRAs for the purpose of estimating impacts would be inappropriate. Doing so would not meaningfully inform the ultimate estimate of impacts that is required in the PEIR.

Response to Comment LA-2-20

The commenter suggests using a QA/QC approach to detection probabilities for future monitoring of repowered turbines. The County appreciates that suggestion and notes that Mitigation Measure BIO-11g beginning on page 3.4-106 of the Draft PEIR requires a TAC, made up of resource agency representatives and, potentially, other experts. The TAC will review proposed monitoring protocols and reports and may suggest the appropriate analysis methods to use, based on the best available and most accepted methods at that time.

Response to Comment LA-2-21

The commenter references the description of potential biases in the Draft PEIR, noting that an integrated detection probability study design, conducted concurrently with monitoring, would be preferable. The County believes that the commenter is suggesting a study design that would apply to future monitoring efforts after repowering. As noted in Response to Comment LA-2-20, a TAC will review proposed monitoring protocols and may suggest the appropriate analysis methods to use, based on the best available and most accepted methods at that time.

Response to Comment LA-2-22

The commenter notes that an additional potential bias in the analysis methods, search radius, should be mentioned. The County appreciates the comment and has added the following text after the third paragraph of *Potential Biases in the Avian Fatality Analysis Methods* on page 3.4-54 of the Draft PEIR.

> Differences in search radius may constitute an additional bias affecting the analysis. There is some debate in the scientific community regarding the appropriate search radii; consequently, fatality rates for new-generation turbines may have a potential and as yet unknown bias.

Response to Comment LA-2-23

For a response to this comment, please see Master Response 11, *Bat Impacts and Mitigation*.

Response to Comment LA-2-24

The commenter discusses areas to be considered in determination of the baseline and threshold for determining significance of impacts on avian species. Please see Master Response 1, *Baseline and Determination of Significance*, for a response to this comment.

Response to Comment LA-2-25

The commenter provides further comments regarding the clarity of the baseline and threshold for determining significance of impacts on avian species. The County appreciates the comment. Please see Master Response 1, *Baseline and Determination of Significance*.

Response to Comment LA-2-26

The commenter requests greater detail on how direct and indirect disturbance of animal species will be avoided. Mitigation Measure BIO-1b provides general protective measures that apply to all special-status species. Impacts BIO-1a-1, BIO-1a-2, BIO-1b, and BIO-1c specify impacts on special-status plant species, and while Mitigation Measure BIO-1b was initially crafted to address such impacts, it was kept general enough to afford protection to a wide range of wildlife species as well. Additional mitigation measures for individual species or groups of species provide detail on how direct and indirect effects would be minimized or avoided, including seasonal limitations. No revisions to the PEIR are necessary.

Response to Comment LA-2-27

The commenter suggests that it would be useful to present data on page 3.4-58, such as in Table 3.4-10, for some other species beside raptors. Page 3.4-58 of the Draft PEIR addresses mitigation measures for potential impacts on special-status plants; however, it appears that the commenter intended to reference page 3.4-53, on which the table actually appears.

The commenter also poses a question regarding the need to assess bird mortality at different distances from the new repowered turbines; notes that further assessing effects should encompass examining before, during, and after putting in new turbines; and notes that a biological monitoring person should be available during all phases to assess potential injury and to suggest ways to mitigate or reduce such effects. The bird mortality monitoring described in Mitigation Measure BIO-11g on page 3.4-106 of the Draft PEIR would require project monitoring according to currently accepted protocols, as reviewed by the TAC; such protocols would include monitoring out to specified distances from turbines. Additionally, the mitigation measure requires the preparation of annual monitoring reports, which are also reviewed by the TAC. Lastly, Mitigation Measure BIO-11i requires implementation of adaptive management measures to be guided by the TAC if the impacts following repowering are not as expected.

Response to Comment LA-2-28

The commenter requests additional detail regarding biological monitoring requirements. Preconstruction surveys (what the commenter refers to as initial surveys) are discussed for each species or group of species potentially affected. The commenter refers to "sensitive species" and states that this needs to be defined; however, the terminology used in Mitigation Measure BIO-1e is "sensitive biological resources" and gives special-status species, sensitive vegetation communities, and wetlands as examples of these resources. For clarification, the text of Mitigation Measure BIO-1e on page 3.4-59 of the Draft PEIR has been revised as shown below.

> All project proponents will retain a qualified biologist (as determined by Alameda County) to conduct periodic monitoring of decommissioning, repowering, and reclamation activities that occur adjacent to sensitive biological resources (e.g., special-status species, sensitive vegetation communities, wetlands). Monitoring will occur during initial ground disturbance where sensitive biological resources are present and weekly thereafter or as determined by the County in coordination with a qualified biologist. The biologist will assist the crew, as needed, to comply with all project implementation restrictions and guidelines. In addition, the biologist will be responsible for ensuring that the project proponent or its contractors maintain exclusion areas adjacent to sensitive biological resources, and for documenting compliance with all biological resources– related mitigation measures.

Response to Comment LA-2-29

The commenter states that special attention should be devoted to invasive plants, including monitoring on a regular basis as part of the monitoring scheme. The County notes that Mitigation Measure BIO-2 on page 3.4-61 of the Draft PEIR includes measures to avoid and minimize the introduction of invasive nonnative plants. The mitigation measure requires monitoring, with the schedule to be determined on the basis of site-specific conditions, as well as preparation of a Grassland Restoration plan in consultation with the County and CDFW as specified in Mitigation Measure BIO-5c on page 3.4-74 of the Draft PEIR. The County believes that the Draft PEIR specifies appropriate monitoring as pointed out by the commenter.

Response to Comment LA-2-30

The commenter points out that field surveys within 3 years prior to activities is an inadequate requirement. Mitigation Measure BIO-3a requires an initial habitat survey by a qualified biologist to identify habitat for special-status species and other sensitive habitats. This measure would not be implemented independently, but in concert with many additional measures specific to each special-status species or group of species that would be implemented after suitable habitat is identified under Mitigation Measure BIO-3a. Many of these measures require species-specific surveys. As noted by the commenter, this measure is appropriate for the initial evaluation of potential species presence, which is all that it was intended to be. No revisions to the PEIR are necessary.

Response to Comment LA-2-31

The commenter notes that care should be given to designing protocols to include all yearly and seasonal variation. The County assumes that the commenter is referring to Mitigation Measure BIO-3a on the referenced page because of the reference to special-status species survey protocols. The mitigation measures refer to agency survey protocols when available and strive to use the best available scientific information for special-status species surveys. This measure applies to impacts from project construction, which will be of relatively short duration compared to the impacts from project operation. Surveys to determine year-round and seasonal variation may not be necessary for a short-term construction project. No revisions to the PEIR are necessary.

Response to Comment LA-2-32

The commenter emphasizes the importance of considering climate change in evaluating impacts. The mitigation measures in this portion of the document are primarily intended to avoid and minimize the potential impacts of construction activities on special-status species and other biological resources. Because these activities are of relatively short duration, long-term monitoring to assess the effects of climate change is not warranted. Long-term monitoring of birds and bats during the operation of the project would be conducted through mitigation measures that are discussed in the PEIR. No revisions to the PEIR are necessary.

Response to Comment LA-2-33

The commenter emphasizes the need for care during reclamation of roads. Mitigation Measure BIO-2 contains measures to avoid and minimize the introduction and spread of invasive plants during repowering activities, and Mitigation Measure BIO-5c requires that a Restoration Plan be developed in coordination with CDFW to ensure that reclaimed roads are restored with noninvasive species and monitored for success. Mitigation Measure BIO-5a contains several elements that protect amphibians: limiting ground-disturbing activities to dry weather between April 15 and October 31, not conducting ground-disturbing work during wet weather, ending all project activity 30 minutes before sunset and not resuming until 30 minutes after sunrise during the migration season from November 1 through June 15, and imposing reduced speed limits. Mitigation Measures BIO-7a, BIO-8a, and BIO-8b were developed to minimize and avoid potential impacts on reptiles and birds, including avoiding the removal of suitable nesting substrate for birds during the nesting season. No revisions to the Draft PEIR are necessary.

Response to Comment LA-2-34

Regarding the adequacy of no-disturbance buffers to avoid disturbances of nesting birds, please see Response to Comment FA-1-13.

Response to Comment LA-2-35

The commenter points out that the MBTA protects all migratory species, not just special-status species. The title of this impact is *Potential construction-related disturbance or mortality of special-status and non–special-status migratory birds*. The text of this specifies that "Construction activities during the nesting season (generally February 1–August 31) of white-tailed kite, bald eagle… could result in direct effects on these species, as well as on non–special-status migratory birds, if they are nesting in the program area." Hence, all migratory birds are addressed in the impact, not just special-status birds. It is generally accepted that the most sensitive time for birds is the breeding season, and all measures for birds set forth in the PEIR have provisions to avoid or minimize impacts during the breeding season. Please see also Response to Comment LA-2-30. No revisions to the PEIR are necessary.

Response to Comment LA-2-36

The commenter points out that simply limiting tree removal to the nonbreeding season may be an insufficient avoidance and minimization measure. Because the placement of wind turbines would generally be on the tops of hills and ridgelines in the program area where trees are not generally present, the number of trees to be removed is expected to be very low. In general, a bird that used a tree for nesting that was removed would nest in a different tree when it returns the following year to nest. Tree removal may indeed be an impact for certain special-status species, but given the low likelihood that trees will need to be removed, the County has determined that the mitigation is adequate as written. Nevertheless, the text of Impact BIO-8a-1 and its variants (BIO-8a-1, BIO-8a-2, BIO-8b, and BIO-8c) has been revised for clarification as shown below.

> Construction activities during the nesting season (generally February 1–August 31) of white-tailed kite, bald eagle, northern harrier, Swainson's hawk, golden eagle, western burrowing owl, loggerhead shrike, and tricolored blackbird could result in direct effects on these species, as well as on non–special-status migratory birds, if they are nesting in the program area. Suitable nesting habitat may be present in nearly all land cover types in the program area. Removal of grassland, burrows, wetland and marsh vegetation, and trees or shrubs with active nests and construction disturbance during the breeding season may result in nest abandonment and subsequent loss of eggs or young. Because the placement of wind turbines would generally be on the tops of hills and ridgelines in the program area where trees are not generally present, the number of trees to be removed is expected to be very low. Exclusion of burrowing owls from their burrows during the non-nesting season as part of efforts to avoid or minimize some forms of direct take could result in harm of burrowing owls. Estimated permanent and temporary impacts on suitable foraging habitat (grassland, cropland, alkali meadow and scald, and wetlands) for special-status and non–special-status birds are shown in Table 3.4-7. Such losses could affect the local population of special-status and non– special-status birds. This would be a significant impact. Implementation of Mitigation Measures BIO- 1b, BIO-1e, BIO-3, BIO-5c, BIO-8a, and BIO-8b would reduce this impact to a less-than-significant level.

Response to Comment LA-2-37

The Commenter expresses concerns regarding impacts on burrowing owl and some mitigation activities to address these impacts. "Passive relocation" is a somewhat confusing term that CDFW has used. Essentially, a burrowing owl could be excluded from its burrow during the non-nesting

season through installation of one-way doors. The owl would not be physically relocated but would be forced to find another burrow on its own. The County would ensure that burrowing owls would only be excluded from their burrows as a last resort and would work with a qualified biologist and CDFW to monitor the exclusion process and provide mitigation for the loss of the occupied burrow (see Mitigation Measure BIO-9). It is unclear if the commenter's question regarding destruction of burrows refers to occupied or unoccupied burrows. As stated, if burrows occupied during the nonbreeding season are removed, compensation would be provided through Mitigation Measure BIO-9. CDFW does not require compensation for the removal of unoccupied burrows. The sixth bullet of Mitigation Measure BIO-8b in the Draft PEIR has been revised as shown below to clarify the terminology related to excluding owls from their burrows.

- If burrowing owls are present in the direct disturbance area and cannot be avoided during the non-breeding season (generally September 1 through January 31), burrowing owls may be excluded from burrows through the installation of~~passive relocation techniques (e.g., installing~~ one-way doors at burrow entrances. A burrowing owl exclusion plan, prepared by the project proponent, must be approved by CDFW prior to exclusion of owls. ~~) may be used. Passive relocation will be accomplished by installing one~~One-way doors (e.g., modified dryer vents or other CDFW-approved method)~~, which~~ will be left in place for a minimum of 1 week and monitored daily to ensure that the owl(s) have left the burrow(s). Excavation of the burrow will be conducted using hand tools. During excavation of the burrow, a section of flexible plastic pipe (at least 3 inches in diameter) will be inserted into the burrow tunnel to maintain an escape route for any animals that may be inside the burrow. Owls will be excluded from their burrows as a last resort and only if other avoidance and minimization measures cannot be implemented.

Response to Comment LA-2-38

The commenter requests a "reasonable 'breeding season' time period" that includes territory establishment and the post-fledging period. It is assumed that the commenter is referring to the breeding season of February 1 through August 31 referred to in Mitigation Measure BIO-8a. The period of February 1 through August 31 is the timeframe that CDFW most commonly uses in its streambed alteration agreements when referring to the breeding season. However, some birds begin breeding activities in January and some young do not fledge until September or October. The timeframe of February 1 through August 31 covers the breeding season of the majority of birds expected to occur in the program area. Additionally, this is a general timeframe, and avoidance and minimization measures would continue for any species nesting in or near the project area beyond August 31. No revisions to the PEIR are necessary.

Response to Comment LA-2-39

The commenter requests clarification regarding mitigation for loss of burrowing owl habitat. Mitigation Measure BIO-9 refers to CDFW's *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 2012:11–13) for the details of mitigating the loss of occupied burrowing owl habitat. This report provides substantial guidance on where mitigation can occur and the maintenance and management of the site. The 2012 Staff Report does not recommend mitigation ratios for habitat compensation but rather recommends that they be "sufficiently large" and that CDFW should be consulted regarding "determining offsite mitigation acreages." Again, owls would not be relocated, but would be excluded from burrows as a last resort. Please see also Response to Comment LA-2-37).

Response to Comment LA-2-40

The commenter notes that the selection of species for the avian impact analysis is not clear in the Draft PEIR. Please see Master Response 7, *Migratory Bird Treaty Act*, for a discussion of the selection and presentation of species in the impact analysis. A discussion of the extent of past mortality, as suggested by the commenter, is not the purpose of the PEIR; the purpose of the PEIR is to assess the effects of future repowering projects. While a discussion of past mortality rates is necessary to describe baseline conditions, the purpose of the PEIR is not to authorize previous projects or reauthorize previous projects; consequently, the extent of past mortality, while significant, is not relevant to the PEIR.

Response to Comment LA-2-41

The commenter observes that managing rock piles and some perches may not reduce prey for kestrels. Regarding the suite of measures outlined under Mitigation Measures BIO-11c and BIO-11f, the County agrees that several of the measures may not reduce prey for American kestrel. However, in addition to the management of rock piles and reduction of perching opportunities described in these mitigation measures, which the County believes are beneficial for other species, the measures also describe several other impact reduction measures the County believes would be beneficial to American kestrel. Those measures include restrictions on the use of rodenticides to minimize secondary poisoning, as well as other turbine design characteristic requirements that would limit perching opportunities on or near turbines, thus avoiding perching behavior in dangerous locations. Moreover, these measures are not identified as reducing impacts to a less-than-significant level.

Response to Comment LA-2-42

The commenter notes that the wide range of predicted burrowing owl fatalities indicates the need for a very rigorous monitoring program, with careful evaluation of methods and results by the TAC. The County agrees with the commenter and believes that the framework of the TAC will facilitate the careful evaluation suggested by the commenter.

Response to Comment LA-2-43

The commenter notes that research used to describe golden eagle populations is nearly 10 years old and, while relevant to cite, cannot be used to reflect the current status of the eagle population. Please refer to Response to Comment FA-1-9 for the expanded species account for golden eagle.

Response to Comment LA-2-44

The commenter disagrees with a statement in the third paragraph of the discussion of *Red-Tailed Hawk* on page 3.4-103 of the Draft PEIR indicating that there has been a general decreasing trend in red-tailed hawk fatalities in the APWRA since 2005. The Draft PEIR statement is supported by information on page 3-6 of the most recent APWRA bird fatality study (ICF International 2014), which also states that the overall fatality rate trend is still downward for most species (including red-tailed hawks). For clarification, the text of the aforementioned paragraph on page 3.4-103 of the Draft PEIR has been revised as shown below.

> Although a substantial number of red-tailed hawk fatalities occur in the APWRA, the annual fatalities have shown a generally decreasing trend since 2005, although not a statistically significant decline (ICF International 2012), and are predicted to continue to decline as repowering proceeds in the

APWRA (Smallwood 2010; ICF International 2012). The yearly fatalities for red-tailed hawks presented in Table 3.4.11 coincide with these other studies, suggesting that repowering the program area is likely to continue to reduce the number of red-tailed hawks killed each year. Considering that the red-tailed hawk population in California has grown while the APWRA has been in operation, continued operation of repowered turbines in the program area is unlikely to have any population-level impacts on red-tailed hawk.

Response to Comment LA-2-45

The commenter states that the components and utility of a project-specific APPs should be more fully described. Please see Master Response 8, *Avian Protection Plan*.

Response to Comment LA-2-46

The commenter asks whether there is a plan to remove hazardous turbines or to have seasonal shutdowns. Mitigation Measure BIO-11i, beginning on page 3.4-110 of the Draft PEIR, includes measures to curtail turbines should fatality thresholds be exceeded. Hazardous turbine removal is not proposed because of the significant ground disturbance and effort required to move a modern turbine, as well as other measures requiring careful siting such as Mitigation Measure BIO-11b on page 3.4-104 of the Draft PEIR. The County's intent is to achieve reductions in impacts through careful initial siting of turbines to avoid hazardous locations, as well as through shutdowns, if necessary.

Response to Comment LA-2-47

The commenter notes that it would useful to cite the SRC's siting guidelines in Mitigation Measure BIO-11b. The County appreciates the comment and has revised Mitigation Measure BIO-11b on page 3.4-104 of the Draft PEIR as shown in Response to Comment FA-1-14. In addition, the siting guidelines have been included in Appendix F, *Historical Documents*, of the Final PEIR.

Response to Comment LA-2-48

The commenter states that Mitigation Measure BIO-11c, which requires the use of turbine designs that reduce avian impacts, does not constitute mitigation because new generation turbines already use these designs. The County notes that Mitigation Measure BIO-11c is primarily intended as a programmatic measure for future repowering projects. While currently proposed wind turbines do meet the design specifications, it is possible that future repowering projects could be proposed using turbine designs that conflict with the specifications. Environmental analysis for such future repowering projects would be tiered from this PEIR; consequently, the County believes the measure is necessary to retain for that purpose.

Response to Comment LA-2-49

The commenter states that "retrofitting existing power lines and such should take into consideration any birds that traditionally get caught in them." The County believes the commenter is referring to Mitigation Measure BIO-11e on page 3.4-105 of the Draft PEIR, which requires repowered projects to retrofit existing infrastructure to minimize electrocution of raptors. Because raptors are the primary group of avian species that are typically subject to electrocutions from power lines, the County believes the measure already takes the type of species typically affected into consideration. No changes to the mitigation measure are required.

Response to Comment LA-2-50

The commenter indicates that the blade height design standard used in Mitigation Measure BIO-11c on page 3.4-104 of the Draft PEIR does not present a complete evaluation of available data and literature. The County appreciates the comment and has revised the mitigation measure as shown below to allow for more thorough review and consideration of turbine designs for future repowering projects.

Mitigation Measure BIO-11c: Use turbine designs that reduce avian impacts

Use of turbines with certain characteristics is believed to reduce the collision risk for avian species. Project proponents will implement the design-related measures listed below.

- Turbine designs will be selected that have been shown or that are suspected to reduce avian fatalities, based on the height, color, configuration, or other features of the turbines. ~~The distance of the lowest point of the turbine rotor (i.e., the tip of any blade at the 6:00 position), will be no less than 29 meters (95 feet) from the ground surface. This design characteristic addresses the finding that roughly 74% of all bird observations (54% of raptor observations) occurred at heights less than 30 meters (Curry and Kerlinger 2009).~~
- Turbine design will limit or eliminate perching opportunities. Designs will include a tubular tower with internal ladders; external catwalks, railings, or ladders will be prohibited.
- Turbine design will limit or eliminate nesting or roosting opportunities. Openings on turbines will be covered to prevent cavity-nesting species from nesting in the turbines.
- Lighting will be installed on the fewest number of turbines allowed by FAA regulations, and all pilot warning lights will fire synchronously. Turbine lighting will employ only red or dual red-and-white strobe, strobe-like, or flashing lights (U.S. Fish and Wildlife Service 2012a). All lighting on turbines will be operated at the minimum allowable intensity, flashing frequency, and quantity allowed by FAA (Gehring et al. 2009; U.S. Fish and Wildlife Service 2012a). Duration between flashes will be the longest allowable by the FAA.

Response to Comment LA-2-51

The commenter states that the requirements in Mitigation Measure BIO-11d on page 3.4-105 of the Draft PEIR are universally applied to wind facilities in California. Mitigation Measure BIO-11d provides requirements for project proponents to include project components and design features that minimize avian impacts. While the County believes that these measures are commonly used at wind facilities in California, including them as Mitigation Measures allows the County to include them in the MMRP to ensure that they are completed. Consequently, the County believes that they should remain as mitigation measures in the Final PEIR.

Response to Comment LA-2-52

The commenter requests that rock piles should be moved more than 500 meters from turbines to reduce the potential for prey to concentrate around turbines. The County agrees. Mitigation Measure BIO-11f on pages 3.4-105 and 3.4-106 of the Draft PEIR has been revised as shown in Response to Comment FA-1-18.

Response to Comment LA-2-53

The commenter makes suggestions regarding the makeup and organization of the TAC. Please see Master Response 6, *Technical Advisory Committee*, which outlines and clarifies the County's

intentions for the TAC. The commenter also notes that the timeline for submission of monitoring reports should be outlined, and notes that the County should consider conservation measures for species other than raptors. Please see Master Response 5, *Avian Fatality Monitoring Methodology*, which provides additional details regarding the postconstruction fatality monitoring measure and includes a timeline for the submission of the required reports.

Although not specifically stated in the Draft PEIR, the County believes that the conservation measures for raptors outlined in Mitigation Measure BIO-11h, beginning on page 3.4-107 of the Draft PEIR, will also have benefits for all avian species. The text of this measure has been revised as shown in Master Response 9, *Avian Compensatory Mitigation*, to clarify the County's conservation approach.

Response to Comment LA-2-54

The commenter states its opinion that the TAC should retain several scientists who are experienced in wildlife ecology, study design, and the wind industry. Please see Master Response 6, *Technical Advisory Committee*, for revisions to the description of the TAC.

Response to Comment LA-2-55

The commenter states that specific requirements for the review and approval of fatality surveys, planned analyses, etc., are needed. The commenter references Mitigation Measure BIO-11h; however, Mitigation Measure BIO-11g beginning on page 3.4-106 of the Draft PEIR outlines fatality monitoring requirements. Please see Master Response 6, *Technical Advisory Committee*, and Master Response 5, *Avian Fatality Monitoring Methodology*, for increased detail regarding fatality monitoring requirements.

Response to Comment LA-2-56

The commenter requests additional rationale for limiting Mitigation Measure BIO-11h to raptors. As noted in response to comment LA-2-53, the County believes that the conservation measures for raptors outlined in Mitigation Measure BIO-11h, beginning on page 3.4-107 of the Draft PEIR, will have benefits for all avian species.

Response to Comment LA-2-57

The commenter questions how the Raptor Mitigation Plan differs from the Avian Protection Plan (APP). As noted in Response to Comment LA-2-53, Mitigation Measure BIO-11h has been revised to clarify that the raptor mitigation plan is to be included in the project-specific APP for each project.

Response to Comment LA-2-58

Please refer to Master Response 10, *Adaptive Management*, for a response to this comment.

Response to Comment LA-2-59

The commenter states that Threshold 3 in Mitigation Measure BIO-11i approaches effective actions but that only ADMM-4 could be effective short of turbine removal. The County appreciates the comment but notes that the thresholds and measures provided are part of an overall adaptive management plan. Inclusion of only one potential measure in an adaptive management plan, as

suggested by the commenter, would not provide the County or the TAC with options to consider in the future. The commenter did not suggest any alternative measures to consider. No change to the mitigation measure is required.

Response to Comment LA-2-60

The commenter states that real-time turbine curtailment as described in Mitigation Measure BIO-11i (ADMM-6) may be impossible to implement. As stated in Response to Comments LA-1-72 and LA-1-73, the County agrees that implementation of this measure may be difficult using today's technology; however, technology may become available in the future to make the measure feasible. Please see Master Response 10, *Adaptive Management*, for revisions to Mitigation Measure BIO-11i.

Response to Comment LA-2-61

The commenter suggests that it would useful to include other individual species in Table 3.4-12 on page 3.4-113 of the Draft PEIR. Please see Master Response 7, *Migratory Bird Treaty Act*, for a discussion of the selection and presentation of species in the impact analysis.

Response to Comment LA-2-62

For a response to this comment, please see Master Response 11, *Bat Impacts and Mitigation*.

Response to Comment LA-2-63

For a response to this comment, please see Master Response 11, *Bat Impacts and Mitigation*.

Response to Comment LA-2-64

For a response to this comment, please see Master Response 11, *Bat Impacts and Mitigation*.

Response to Comment LA-2-65

Please see Master Response 1, *Baseline and Determination of Significance*, for a discussion of the difference between the baseline for analysis and the No Project Alternative.

Response to Comment LA-2-66

As discussed in Chapter 4 of the Draft PEIR, the State CEQA Guidelines (Section 15126.6) require consideration of the No Project alternative. Section 4.1, *Alternatives Screening Process*, of the Draft PEIR contains the following text on pages 4-1 and 4-2 which explains this. No changes to the text of the EIR are required.

- The range of alternatives must include the *No-Project* alternative. The no-project analysis will discuss the existing conditions at the time the notice of preparation was published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved based on current plans and consistent with available infrastructure and community services. The No-Project alternative is not required to be feasible, meet any of the project objectives, or reduce the project's expected impacts to any degree.

Response to Comment LA-2-67

The commenter states that a discussion is needed of how federal agencies, especially USFWS, could deal with violation of MBTA. The County appreciates the comment, but notes that a discussion of compliance with MBTA is outside the scope of the Draft PEIR. USFWS is the agency with jurisdiction over migratory birds under the MBTA. The County would also like to note that the Draft PEIR finds that impacts on avian species, including birds protected under the MBTA, would be significant and unavoidable under CEQA. Please see also Master Response 7, *Migratory Bird Treaty Act*.

E.5 Nongovernmental Organizations

NGO-1—Audubon California

Michael Lynes
Director of Public Policy
Audubon California
400 Capitol Mall, Suite 1535
Sacramento, CA 95814
Tel. (415) 505-9743
Email: mlynes@audubon.org

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Via Email
Sandra Rivera
Planning Department
Community Development Agency
224 W. Winton Avenue, Rm 111
Hayward, CA 94544
E-mail: sandra.rivera@acgov.org

RE: Draft of the Programmatic Environmental Impact Report for Altamont Pass Wind Resource Area

Dear Sandra:

These comments are submitted on behalf of Audubon California regarding the draft Program Environmental Impact Report for Altamont Pass Wind Resource Area Repowering, June 2014, State Clearinghouse Number 2010082063. ("PEIR") Our comments are provided to improve the PEIR and facilitating a repowering process that will promote responsible wind power generation while ensuring that local bird populations are conserved.

I. COMMENTS ON THE DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT

A. The Description of Existing Conditions Should Be Amended to Acknowledge the 2010 Settlement Agreement.

1

In 2010, the California Attorney General's Office, five chapters of the National Audubon Society, and NextEra, Inc. reached an agreement regarding NextEra's wind operations in the Altamont Pass (hereinafter, "the 2010 Agreement"). The 2010 Agreement provided a significant step forward for repowering in the APWRA. Moreover, it set forth several innovate measures intended to repower the APWRA in an economically-viable manner that monitored and protected bird populations. The settlement should be summarized in the DEIR.

B. The Project Description Should Be Amended to Reflect that Conservation of Local Bird Species Is a Priority.

2

As part of existing conditions, the DEIR summarizes the 2007 settlement between the Audubon chapters, Californians for Renewable Energy ("CARE"), and several wind companies, to resolve claims by Audubon and CARE that the County had renewed several APWRA wind operation permits without adequate environmental review (hereinafter "the 2007 Agreement"). However, the DEIR fails to mention a key provision of the 2007 Agreement, specifically that the parties would develop and implement a

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Natural Communities Conservation Plan ("NCCP"), which are intended to produce conservation benefits for impacted species, or a similar plan "approved by the California Department of Fish & Game". (*Id.*, at 5) According to the 1991 Natural Communities Conservation Act ("NCCA"), a NCCP should include methods and procedures to "maintain or enhance the condition of a species" with the goal of avoiding listing species under the California Endangered Species Act (CESA). 2 cont.

The Project Description of the PEIR only lists that reduction of avian mortality through repowering is a project goal. (PEIR, at 2-2) The PEIR's failure to include this goal is problematic—and emphasized by the fact that it fails to mention of efforts—required under the 2007 Agreement—that wind operations management actively conserve species in the project area.

The PEIR should be revised to state that one of the program's goals is to maintain healthy, sustainable populations of birds and other wildlife within the APWRA. Achieving this goal is necessary for projects to in line with the requirements of the 2007 Agreement and state and federal laws.

Audubon has been repeatedly assured by County staff that the APP would replace the proposed NCCP in ensuring that impacted species would derive some conservation benefits (i.e., net gains to populations) to offset impacts from wind operations in the APWRA. Alameda County staff and its consults repeatedly assured Audubon that this goal would be addressed throughout our participation in the settlement discussions that led to the 2007 Agreement, the APWRA Steering Committee, development of the NCCP, and work on the EIR and Avian Protection Program. When the NCCP was abandoned, Audubon was again assured that active conservation of affected species would be priority.

But, as written, the PEIR fails to expressly acknowledge this legal requirement (under the settlement) or explain how activities covered under the PEIR will achieve this goal. Instead, we are assured that the "model" APP will serve the role that the NCCP promised to fulfill.

In Chapter 3, the PEIR acknowledges that a NCCP is an option from the Settlement Agreement and offers the optional APP in its place. Specifically, the PEIR states:

> As an alternative to the NCCP called for in the Settlement Agreement, the County has developed a draft *Avian Protection Program* (APP) to provide a framework and process for wind energy projects to comply with applicable statutes (e.g., MBTA and BGEPA) through the repowering process. The APP provided a broad evaluation of existing environmental conditions, bird use, and avian fatalities in the program area. It focused on avian mortality associated with repowering projects—specifically construction, operation, monitoring, and mitigation. The key provisions of the APP have been incorporated into this PEIR as impacts and mitigation measures. Project proponents will be expected to develop project-specific APPs, incorporating mitigation, monitoring, and adaptive management strategies as set forth in this PEIR.

(PEIR, at 3.4-7) Notably, the APP is not approved of by the CDFW. The PEIR should at least acknowledge that the APP does not meet the 2007 Agreement's plan requirement and that, at a minimum, the obligation under the settlement remains unmet.[1]

The Avian Protection Program does not quality as a NCCP or "similar plan" and will not be approved of by the California Dept. of Fish & Wildlife. Instead, the APP is designed to meet CEQA-level mitigation

[1] Audubon notes that under the 2010 Agreement, NextEra is no longer bound by the NCCP requirement. However, the 2007 Agreement remains in effect for other parties.

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goals, which fall substantially short of ensuring affected species derive "conservation benefits" (i.e., that populations are healthier and more sustainable). 2 cont.

Finally, the APP is not provided with the draft PEIR. As the SRC has commented, it is difficult to determine which portions of the APP are included in the PEIR. It would be helpful for the public and decision makers to see the model APP which purports to meet the requirements of a NCCP or similar plan from the 2007 Agreement.

C. Impacts to Specific Bird Species

1. Golden Eagles 3

The PEIR should better describe the local population of golden eagles and provide a more sensitive analysis of impacts to the local population. Golden eagles have received a great deal of attention and study in the APWRA. The PEIR's analysis for golden eagles is surprisingly light. Audubon appreciates that the APP provides a more robust analysis, but some of the information provided in the APP should be in the PEIR as well (many readers will not read both documents). The PEIR should borrow from the APP and expressly (1) estimate the local population size, (2) estimate a limit for mortality, over which a decline in the local golden eagle population would be expected, (3) identify specific measures to keep the local golden eagle population viable, and (4) identify necessary mitigation measures that are proven to work.

It is not enough for the PEIR to punt the issue of eagle conservation to potential permitting under the BGEPA. First, there is no guarantee that any operator will get an eagle take permit, let alone implement its hypothetical management measures. Second, an eagle take permit may not adequately focus on impacts to the local population of golden eagles. Again, the 2007 Settlement Agreement anticipated a plan, like a NCCP, that would address impacts in a project area and provide required conservation measures within that area. As written, the PEIR does not set requirements that reach this level of conservation for eagles.

2. American Kestrel 4

American kestrel populations in the west are in decline. (*See, e.g.*, American Kestrel Partnership, available at http://kestrel.peregrinefund.org/kestrel-decline; *see also* http://birds.audubon.org/christmas-bird-count-and-breeding-bird-survey-document-population-trends-american-kestrel) While the APP provides a more robust analysis, the PEIR fails to note this issue adequately and fails to adequately assess impacts—especially cumulative impacts—arising from the projects covered by the PEIR.

3. Burrowing Owl 5

Mitigation Measure Bio-8b states that if an active burrow is found near a proposed work area and work cannot go forward outside of the nesting season, a "no-activity" zone will be established and extend at least 250 feet around the burrow. (PEIR, 3.4-83) The PEIR does not include information to support the proposed buffer zone. Has the 250-foot buffer been demonstrated to be adequate? If so, Audubon requests that the supporting information be presented in the PEIR.

MM Bio-8b also states that "passive relocation" may be used when burrowing owls are in a direct disturbance area during the non-breeding season. (*Id.*) Audubon is not aware of any studies that demonstrate that passive relocation of burrowing owls is adequate to avoid or minimize impacts to local

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populations of burrowing owls. It is our understanding, such efforts often fail and cause significant disturbance to the local population. 5 cont.

MM Bio-9 states that burrowing owl habitat loss will be mitigated through "a conservation easement or by implementing alternative mitigation determined through consultation with CDFW…." (PEIR, at 3.4-86) Audubon would like to understand when this decision will be made and by whom. Also, Audubon is concerned about the lack of evidence that supports that conservation easements or other measures actually adequately mitigate for the loss of foraging habitat for burrowing owls.

4. Tricolored Blackbirds 6

The PEIR correctly identifies that Tricolored Blackbirds are a species of special concern in California. (PEIR, at 3.4-37) However, the PEIR should be amended to more fully describe the status of Tricolored Blackbird.

Tricolored blackbird populations are in a significant, precipitous decline. (*See* http://www.fresnobee.com/2014/03/15/3825370/dark-daysblackbirds.html) It is very possible that the species will be a candidate for the California and the federal endangered species lists. Once listed as endangered, the tricolored blackbird could present additional potential challenges if mortality due to wind operations at the APWRA continue. The rate of mortality is relatively low for tricolored blackbirds in the APWRA, but the PEIR should still better reflect the species' sensitivity and potential to create additional regulatory burdens for operators.

6. Western Meadowlark 7

Data from the 2005-2012 Avian Fatality Report indicate a high degree of mortality for western meadowlark. (Avian Fatality Report, Table 3-3, at p. 5 of 5; Table 3-4, at p. 4 of 5) According to the report, approximately 1100 western meadowlarks are killed in the APWRA by wind operations each year. (*Id.*)

While abundant, western meadowlarks have shown population declines in some parts of their range. (*See, e.g.*, http://www.mbr-pwrc.usgs.gov/bbs/grass/a5011.htm) Potential contributors to this decline involve habitat destruction and disturbance. (*Id.*)

Because the western meadowlark is abundant in the APWRA and suffers one of the highest rates of mortality, the PEIR should be improved to assess impacts to the species in the AWPRA and due to cumulative impacts based on other projects, land conversion, habitat loss and fragmentation, and disturbance in the region. While the western meadowlark is not current a special status species, it is suffering population declines and the programmatic EIR proposes to cover 20 years of operations and impacts. Therefore, the PEIR should be forward-thinking and consider impacts over this time to species such as the western meadowlark.

D. Avian Mortality Analysis Methods 8

Audubon shares the concerns raised by members of the Altamont SRC regarding the avian mortality analysis presented in the PEIR. Specifically, Audubon is concerned that the PEIR does not appear to clearly identify a baseline for the four focal raptor species (golden eagle, red-tailed hawk, American kestrel, and burrowing owl). Column 1 of Table 3.4-10 (p. 53) sets forth mortality rates, but it is unclear whether they are for non-repowered turbines. Moreover, the basis for the proposed rates are unclear 0 are

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they an average of rates reported from 2005-2011? What data sets or reports are being relied upon? Are there more recent data available to inform the analysis? 8 cont.

The "baseline" of unsustainably high historic fatality rates should *not* be used as either a threshold of significance (see PEIR, at 3.4-55) or as a trigger for implementing mitigation and adaptive management measures in the PEIR (see id., at 3.4-110-111). Rather, the "baseline" should only be used to evaluate relative success of repowering as compared with the old-generation turbines (i.e. percentage reduction in fatalities comparing new generation with old generation turbines).

Audubon acknowledges that the proper way to proceed with repowering in the Altamont is to consider the significance of impacts going forward, i.e. to not dwell overly long on past mortality.

E. Determination of Significance 9

The PEIR's section on the Determination of Significance is extremely difficult to read. It should be revised and made clarified. For example, the section includes the following, extremely complicated sentence:

> The analysis of impacts on biological resources, and in particular on avian species in the program area, accordingly, entailed the comparison of the existing condition of infrequent but regular and more or less predictable levels of avian mortality associated with the existing wind turbines—the baseline mortality rate defined above in *Avian Fatality Analysis Methods*—with the anticipated or calculated projection of the mortality rate that would result from implementation of the program or projects.

(PEIR, at 3.4-55) Aside from its readability, the statement erroneously opines about the "infrequent" levels of mortality in the program area. Audubon reminds the County that the APWRA has one of the highest rates of mortality of any wind farm *in the world*.

Perhaps more problematically, the statement indicates that overall mortality in the APWRA will be considered less than significant if is below the baseline established in the Avian Fatality Analysis Methods, several problems with which we note in Section D above.[2] We also echo the concerns provided by the SRC that the baseline levels—and therefore the threshold for determining the significance of impacts—are questionable and could bring the sufficiency of the PEIR into question. Audubon recommends that this section be revised to improve the quality of the PEIR.

Audubon is also concerned that the section does appear to have been informed by the 2010 Agreement (or at least does not acknowledge it). The section indicates that it was informed by the 2007 Agreement but omits mention of the 2010 Agreement, which set forth an iterative process by which data gathered from prior repowering projects would inform siting and management for subsequent phases. That should be the model for development and redevelopment in the APWRA going forward. We are particularly concerned that the APWRA be a level playing field and fair market. Companies that have agreed to be forward-

[2] Audubon believes that any mortality of protected species, including species protected by the MBTA and the BGEPA, should be considered a significant environmental impact. In the APWRA, this may be particularly so given the historic and cumulative impacts on local populations. For this reason, the 2010 Agreement instituted a rigorous process for siting, monitoring, and adaptive management.

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thinking in their repowering efforts should not be at a disadvantage to companies that have yet to repower or that may seek to do the bare minimum set forth by the PEIR. 9 cont.

Under the model set forth in the 2010 Agreement, an appropriate threshold of significance for both Golden Hills I and other repowering projects in Alameda County with turbine sizes comparable to the Vasco Winds Project is to use the fatality rates for the Vasco Winds Project.[3] This threshold of significance would then be used to determine whether the next phases of repowering are meeting the Agreement's goal to continually reduce turbine-related raptor deaths through advanced micro-siting, and also would be used as triggers for the adaptive management and raptor fatality compensation requirements, as discussed further below.

In addition, Audubon notes that the threshold of significance mentioned at 3.4- 55 is inconsistent with the PEIR's correct statement at 3.4-98 that any avian mortality was considered a significant and unavoidable impact, and the implication at 3.4-99 that the threshold of significance is based on extrapolated fatality rates from the three previously repowered projects (Diablo Winds, Buena Vista and Vasco Winds), not on fatality rates from the old generation turbines.

F. The Impacts Analysis and Mitigation Measures Should Be Improved. 10

Audubon has concerns about several of the impacts analyses and proposed mitigation measures set forth in the PEIR. These are discussed in greater detail below.

Impact Bio-11a-1: Avian Mortality Resulting from Operation of Wind Turbines (Pages 98-103) The PEIR provides in inadequate discussion of the latest scientific research regarding avian populations and impacts in the APWRA. The golden eagle analysis, for example, relies on studies that are more than ten years old. In particular, the PEIR should discuss and apply the recent and ongoing golden eagle and burrowing owl research being conducted at Altamont Pass by Dr. Shawn Smallwood, Doug Bell and Grainger Hunt et al. using scientific research mitigation funds provided by Next Era and administered by the East Bay Regional Park District pursuant to paragraph 6.0 of the 2010 Agreement.

Audubon is particularly concerned about population-level impacts to golden eagles and other affected species. The PEIR's analysis of these impacts local populations (i.e., AWPRA, or in Alameda County) and rangewide populations should be improved, including consideration of cumulative impacts from other factors affecting the species (habitat loss, drought, climate change, rodenticides, etc.) over the 30-year period considered in the PEIR for new projects.

Wind development is but one of the many factors affecting these species' population dynamics, but it is a significant and growing stressor for many raptor species. The PEIR should be clear as to how it derives its mortality estimates so they can be part of the larger consideration of impacts and management for affected species.

Specifically, are the fatality estimates for repowering presented as a range based on extrapolation to the entire Altamont of the fatality rates for the Diablo Winds, Buena Vista and Vasco Winds Projects, as set

[3] It is also appropriate for the PEIR to consider the fatality rates based on the three years of monitoring results for the Buena Vista Project in Contra Costa County. However, in developing an appropriate threshold of significance, it is important to bear in mind that the turbines used for the Buena Vista project are substantially smaller (1 MW) than the turbines that were used for the Vasco Winds Project (2.3 MW) and that will likely be used for repowering projects in Alameda County. The Diablo Winds turbines are probably too small to make this early repowering project of much relevance to current repowering efforts.

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forth in Table 3.4-11? The same concern applies to the discussion of fatality estimates for the Golden Hills 1 and Patterson Pass projects at 3.4- 115-120 of the PEIR: it is not clear what the number of projected fatalities for each of the four focal raptor species (and other bird species) are expected to be and how the PEIR arrived at these estimates. Estimates that are widely variable (e.g., see PEIR, at 3.4-100 for burrowing owls) should be explained and narrowed. Moreover, to the extent possible, qualitative descriptors of impacts (e.g., a "small estimated increase") should be quantified. 10 cont.

Mitigation Measure BIO-11a: Prepare a project-specific avian protection plan 11
MM Bio-11a merely states:

> All project proponents will prepare a project-specific APP to specify measures and protocols consistent with the program-level mitigation measures that address avian mortality.

(PEIR, at 3.4-104) Again, Audubon is compelled to remind the County that "program-level mitigation measures" do not meet the requirements of the 2007 Agreement, requiring a NCCP or NCCP-equivalent plan approved of by the California Dept. of Fish & Wildlife. Mitigation is not conservation.

Moreover, the PEIR is unclear about what exactly will be included in a project-specific APP. Audubon is left to conclude that the promise of actual conservation benefits for affected species promised in the 2007 Agreement has once again been delayed and the likelihood of its fulfillment appears less likely than ever.

Mitigation Measure Bio-11b: Siting Turbines to Minimize Potential Mortality of Birds 12
MM Bio-11b should be revised to include more detailed language regarding micro-siting of new turbines as described in paragraph 4.0 of the 2010 Agreement. (*See* PEIR, at 3.4-104) It should also reference the most recent micro-siting studies being conducted by Dr. Shawn Smallwood, including but not limited to: *Siting Repowered Wind Turbines to Minimize Raptor Collisions at Vasco Winds*, Smallwood and Neher, 2010 and *Siting Wind Turbines to Minimize Raptor Collisions at Golden Hills Repowering Project, Altamont Pass Wind Resource Area*, Smallwood and Neher, 2014; and also reference the SRC siting guidelines, Document P-70.

Mitigation Measure Bio-11e: Retrofit Existing Infrastructure to Minimize Risk to 13
Audubon is extremely concerned about the reliance on retrofitting power poles as a primary mitigation measure. (MM Bio-11e, at 3.4-105) While the measure can reduce electrocutions when done correctly, the practice is often implemented poorly. Moreover, the "mitigation" measure is, arguably, performing an action that the owners of the power poles should already be undertaking, e.g., preventing the illegal killing of protected raptors by improving infrastructure. In any event, the PEIR should set forth an evidentiary basis for the sufficiency of this mitigation measure, set a criteria for appropriate and effective retrofits, and provide for a monitoring mechanism to ensure that retrofits occur and are effective. As with any mitigation measure, if power pole retrofits are ineffective, credit for the measure should not be provided.

Mitigation Measure Bio-11g: Implement Post-Construction Avian Fatality Monitoring 14
Audubon appreciates the hard work dedicated by the members of the Scientific Review Committee over the years and understands that there may be a consensus that a less formal "Technical Advisory Committee" may be the preferred venue for scientific review going forward. If a TAC is being created, it should be comprised of independent scientists with a broad range of expertise and reflect representatives from various stakeholders in the AWPRA (e.g., wildlife agencies, NGOs, industry, and independent

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biologists). It would also be helpful to better define the TAC's roles and how its work products will be incorporated into management of the APWRA. 14 cont.

Moreover, MM Bio-11g should provide an explicit requirement and deadline for producing interim and final monitoring reports and for conducting bird and bat behavior and use surveys. The 2010 Agreement requires the monitoring program to prepare interim, annual monitoring reports within three months of completing each year of post-construction monitoring, a three-year monitoring report within six months of completing the first three years of post-construction monitoring, and a final two-year monitoring report within six months of completing the final two years of post-construction monitoring. The Agreement also requires the monitoring program to conduct bird and bat utilization and behavior studies, in consultation with the SRC (or TAC), for each phase of repowering "in order to inform and update siting analyses" for each subsequent phase of repowering and any future repowering efforts. The results of these use and behavior studies must be included in all monitoring reports.

Data from monitoring should also be made available to the public and for independent peer-reviewed analysis and publication. Transparency in the data collection and analysis process will improve the public's confidence that adequate scientific review of impacts and populations in the APWRA is occurring. It will also be essential for understanding changes to bird and bat populations in the APWRA over the 30-year period anticipated by the PEIR.

Mitigation Measure Bio-11h: Compensate for the Loss of Raptors 15
MM Bio-11h does not adequately describe how losses for raptors will be fully compensated. (See PEIR, at 107-110) For example, who will decide what specific "options" for compensation will apply to a given project and according to what process? Also, it is not clear why the compensation options must be provided in ten-year increments and whether the project operator must provide such compensation for the full thirty-year anticipated life of the project (i.e. three ten-year increments). Audubon notes that PEIR page 3.4-108 references the correct threshold of significance for the first ten year increment of compensation: the estimates of raptor fatalities for the Vasco Winds Project set forth in Table 3.4-10.

Mitigation Measure Bio-11i: Adaptive Management Program 16
Audubon is concerned that MM-Bio-11i is not adequately specific about how adaptive management measures will be implemented. (PEIR, at 3.4-110-111) We recommend that the PEIR be revised to adopt language from the 2010 Agreement, which would implement adaptive management measures when it is determined (preferably after consultation with the TAC) that "one more turbines are causing [a] significantly disproportionate" number of fatalities of focal raptors or bats. (2010 Agreement ¶ 5.2.) The PEIR also should specify a time frame by which adaptive management measures must be implemented (e.g., how long after monitoring results are available). All practicable management measures should be considered – including seasonal shutdowns, adjustment of cut-in speeds, and additional monitoring. Audubon is not aware of peer-reviewed studies demonstrating that blade-painting has not been shown to be an effective fatality reduction measure. If blade-painting or other experimental methods are to be relied upon, the PEIR should require an evidentiary showing that they are adequate before including them in the AMP.

Impact Bio-12a-1: Potential Mortality or Disturbance of Bats 17
The PEIR would be greatly improved with a strengthened impact analysis for bats. Currently, the PEIR, and Impact Bio-12a-1, is too general and its conclusions are inadequately supported. (PEIR, at 3.4-121) The PEIR should identify what bat surveys have occurred in the APWRA and environs. It should also describe how mitigation measures will reduce impacts to less than significant levels. As written, the PEIR fails to adequately characterize this information.

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Impact Bio-14a-1: Turbine-Related Fatalities of Bats
The description of Impact Bio-14a-1 is vague and lacks adequate references. (*See* PEIR, at 3.4-125) It states that ""existing fatality data" and "trends observed at other wind energy facilities", but fails to identify the data, trends, or other wind facilities (or reports) referred to. Alameda County has done a very poor job of monitoring bat mortality in the APWRA and should look to other wind operation sites for better models for bat monitoring and conservation.

Mitigation Measure Bio-14b: Post-Construction Bat Fatality Monitoring
As mentioned above, bat mortality has received scant attention from Alameda County in the past, a process worsened by the failure to include a bat expert on the SRC or otherwise engaged in the stakeholder process. Audubon believes that, at a minimum, circumstances for bats in the APWRA would improve if bat fatality monitoring program included bat use and behavior as well as fatality studies, similar to avian monitoring and consistent with the terms set forth in the 2010 Agreement. Bat fatality monitoring should not be restricted to turbine roads and pads because these limitations are likely to result in a severe underestimation of fatality rates.

Mitigation Measure Bio-14d: Develop Bat Adaptive Management Plan
The PEIR should specify a time frame by which adaptive management measures must be implemented.

Impact Bio-14a-1: Turbine-Related Fatalities of Bats
Again, the PEIR should be revised to identify "existing fatality data" (and confidence in conclusions drawn from it) and what "trends observed at other wind energy facilities" are being relied upon.

Mitigation Measure Bio-14b: Post-Construction Bat Fatality Monitoring
The bat fatality monitoring program should include bat use and behavior as well as fatality studies, consistent with paragraph 5.1 of the Next Era-Attorney General Agreement. In addition, bat fatality monitoring cannot be restricted to turbine roads and pads. This is likely to result in a severe underestimation of fatality rates.

Mitigation Measure Bio-14d: Develop Bat Adaptive Management Plan
The PEIR should specify a time frame by which adaptive management measures must be implemented.

17 cont.

II. CONCLUSION

Audubon appreciates the opportunity to comment on the draft programmatic environmental impact report and to continue to participate on the APRWRA Steering Committee. We encourage the County to consider these comments and use them to improve the PEIR. If you would like to discuss this matter further, please do not hesitate to contact me at (415) 505-9743 or mlynes@audubon.org

Thank you,

Michael Lynes

Michael Lynes
Director of Public Policy
Audubon California

E.5.1 Comment Letter NGO-1—Audubon California

Response to Comment NGO-1-1

The commenter suggests that the 2010 Settlement Agreement should be summarized in the PEIR because this agreement sets forth innovative measures intended to repower the APWRA in an economically viable manner that monitors and protects bird populations. The County notes that it is not a party to the 2010 Agreement and thus has no responsibilities pursuant to the agreement. However, the County also notes that the Draft PEIR was informed by the measures within the 2010 Agreement and appreciates the time and effort that went into developing the agreement. To provide a more complete description of the existing conditions, the County has added the following summary following *2007 Settlement Agreement* on page 3.4-7 of the Draft PEIR.

2010 Settlement Agreement

On December 3, 2010, Audubon, CARE, NextEra, the People of the State of California, and the Attorney General entered into a settlement agreement. The repowering schedule in the 2010 Settlement Agreement entailed NextEra repowering old-generation turbines under its current ownership in the APWRA as soon as commercially reasonable, in three or fewer phases, with each phase comprising up to 80 MW and each phase undergoing CEQA review by means of an EIR. Phase 1 was the Vasco Winds project in Contra Costa County; Phases 2 and 3 would be projects in the Alameda County portion of the APWRA. Each phase of repowered turbines is subject to 3 years of postconstruction fatality monitoring, using the focal species identified in the 2007 Settlement Agreement as well as bats as benchmarks for evaluating effectiveness of repowering. The agreement is structured such that each phase of repowering is intended to inform the siting of turbines in subsequent phases. Mitigation fees to compensate for ongoing bird and bat fatalities were also established in the agreement. NextEra is the only wind operator in the APWRA that was a party to the 2010 Settlement Agreement. While the County is not a party to the 2010 Settlement Agreement and therefore has no responsibilities under the agreement, the repowering, conservation, and monitoring measures in the agreement were reviewed and incorporated into the mitigation measures in the PEIR as deemed appropriate by the County.

The County believes that many of the concepts in the 2010 Settlement Agreement have been incorporated into the PEIR. For example, Mitigation Measure BIO-11b requires repowering projects to conduct careful siting to minimize impacts, based on the best available siting models and/or guidelines; Mitigation Measure BIO-11g requires postconstruction fatality monitoring (including monitoring beginning again at year 10, as set forth in the 2010 Agreement); and Mitigation Measure BIO-11h requires compensation for avian species (noting NextEra's 2010 Agreement requirements). For more complete background, the 2007 and 2010 Settlement Agreements have been included in Appendix F, *Historical Documents*, of the Final PEIR.

Response to Comment NGO-1-2

The commenter states that program-level mitigation measures and program goals do not meet the requirements of the 2007 Settlement Agreement. The County has worked for many years in good faith to implement the 2007 Settlement Agreement. As noted in *History since 2001* on page 1-8 of the Draft PEIR, despite many years of effort, the County has been unable to develop an HCP/NCCP and believes that the integration of the provisions of the program APP into the PEIR is the best remaining approach to meet the goals of the 2007 Settlement Agreement. The County notes that the Draft PEIR includes numerous mitigation measures developed using a conservation approach. For example, Mitigation Measure BIO-11h requires repowered projects to compensate for the loss of

every raptor, regardless of whether the repowered project reduces impacts from the existing project. Furthermore, the measures have been designed using a landscape-scale approach, so that the conservation actions provide the greatest possible mitigation benefits. The County believes that these measures and approaches are consistent with the goals of the 2007 Settlement Agreement.

As requested by the commenter, the draft Program APP (as described in *History since 2001* on page 1-8 of the Draft PEIR), has been included in Appendix F, *Historical Documents*, of the Final PEIR.

Response to Comment NGO-1-3

The commenter requests a better description of the local population of golden eagles and additional analysis of impacts on the local population. The commenter also suggests that the Draft PEIR punts the issue of eagle conservation to potential permitting under the BGEPA. In response to this comment, the County has expanded the *Golden Eagle* species account on pages 3.4-36 and 3.4-37 of the Draft PEIR as shown in Response to Comment FA-1-9.

The County notes that the Draft PEIR includes a discussion of the potential impacts on the local golden eagle population in the discussion of Impact BIO-11a-1 on page 3.4-101; however, regardless of this additional information, concludes that "turbine-related mortality reduces the resilience of the local golden eagle population." Additionally, the golden eagle conservation is addressed in the PEIR and not left to potential permitting under the BGEPA. Mitigation measure BIO-11h, beginning on page 3.4-107 of the Draft PEIR, requires each project to implement mitigation for every golden eagle killed during operations, regardless of whether the operator obtains a programmatic eagle take permit from USFWS.

Response to Comment NGO-1-4

The commenter states that the Draft PEIR fails to adequately address American kestrel status and impacts. The current status and life history information for American kestrel are provided on page 3.4-37 of the Draft PEIR. However, in response to this comment, the County has revised the first paragraph of the description of *American Kestrel* on page 3.4-37 of the Draft PEIR as shown below to further inform the PEIR.

> American kestrel is not a state- or federally listed species. However, it is protected under the MBTA and the California Fish and Game Code and is an APWRA focal species. The North American Breeding Bird Survey has detected significant declines of American kestrel populations in many areas of the United States, including California (Smallwood and Bird 2002).

The description of impacts on American kestrel beginning on page 3.4-99 of the Draft PEIR notes that "populations have declined over the western U.S. since the 1980s, pronouncedly so since the 1990s." Repowering is expected to have significant reductions in impacts on American kestrels. Nevertheless, the analysis concludes on page 3.4-104 of the Draft PEIR that for all avian species analyzed, fatalities would still be expected to occur and that, despite reductions in impacts, turbine related fatalities would result in a significant and unavoidable impacts even after the application of mitigation measures. Moreover, Mitigation measure BIO-11h, beginning on page 3.4-107 of the Draft PEIR, requires each project to undertake mitigation for every raptor killed during operations, regardless of whether the baseline fatality rate is exceeded. The County believes this conservation standard is consistent with that suggested by the commenter.

Response to Comment NGO-1-5

The commenter states that information is not presented in the Draft PEIR to support the proposed no-activity buffers presented for burrowing owl. As described in the second paragraph of *Impacts and Mitigation Measures* on page 3.4-56 of the Draft PEIR, mitigation measures for biological resources were developed to be consistent with the avoidance, minimization, and mitigation measures set forth in the EACCS. The 250-foot buffer distance presented in the Draft PEIR is consistent with the burrowing owl avoidance and minimization measures in Table 3-3 of the EACCS. Additionally, the County notes that Mitigation Measure BIO-8b in the Draft PEIR requires establishment of a no-activity zone that is "large enough to avoid nest abandonment and will extend a minimum of 250 feet around the burrow." Thus, the 250 feet presented in the Draft PEIR is the minimum distance necessary. The EACCS is described in *East Alameda County Conservation Strategy* on page 3.4-6 of the Draft PEIR.

The commenter also raises questions regarding "passive relocation" of burrowing owls. For a detailed discussion of passive relocation and the relevant revisions to the text of the Draft PEIR, please see Response to Comment LA-2-37. Because ground squirrel burrows are abundant in the program area, their availability for excluded owls to occupy should minimize the potential harm that could result from burrow exclusion. The text of Impact BIO-8a-1 and its variants (BIO-8a-1, BIO-8a-2, BIO-8b, and BIO-8c) has been revised as shown in Response to Comment LA-2-36.

As described in CDFW's *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 2012:11–13), the conservation easement or alternative mitigation for the loss of occupied burrowing owl habitat will be in place prior to the habitat being altered or destroyed and before any owls are excluded from burrows. The project proponent would work with CDFW to develop the compensation plan, which would be reviewed and approved by the County. Mitigation Measure BIO-9 has been revised as shown below.

> If construction activities would result in the removal of occupied burrowing owl habitat (determined during preconstruction surveys described in Mitigation Measure BIO-8a), this habitat loss will be mitigated by permanently protecting mitigation land through a conservation easement or by implementing alternative mitigation determined through consultation with CDFW as described in its *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 2012:11–13). <u>The project proponent will work with CDFW to develop the compensation plan, which will be subject to County review and approval.</u>

The commenter also questions the efficacy of conservation easements as compensatory mitigation for loss of burrowing owl foraging habitat. This is a standard mitigation approach as described in CDFW's *Staff Report on Burrowing Owl Mitigation*.

Response to Comment NGO-1-6

The commenter states that the PEIR should be amended to more fully describe the status of tricolored blackbird, but also notes that the rate of mortality for tricolored blackbird is relatively low. The commenter observes that it is possible that the species will be a candidate for the California and federal endangered species lists. The County points out that it is required to consider that status of species at the time the Draft PEIR is prepared. The description of the status of tricolored blackbird on page 3.4-40 correctly discloses the current status as a species of special concern in California. Additionally, the species description on page 3.4-40 notes that surveys have "confirmed a significant declining trend in California … with a particularly dramatic decline noted after 1994." Moreover, the County notes that impacts on native non-raptors—a category that includes tricolored blackbird—

were found in the Draft PEIR to be significant and unavoidable. Nevertheless, the second paragraph of *Tricolored Blackbird* on page 3.4-40 of the Draft PEIR has been revised as shown below with the most current status information.

> Surveys during the 1990s (Hamilton et al. 1995; Beedy and Hamilton 1997; Hamilton 2000) confirmed a significant declining trend in California populations since the 1930s, with a particularly dramatic decline noted after 1994. Statewide surveys conducted during the 2000s indicate some recovery from the 1999 low; however, the population increases have primarily been limited to the San Joaquin Valley and the Tulare Basin (Kyle and Kelsey 2011). A total of 145,135 tricolored blackbirds~~259,322 adults~~ were counted during the most recent (201411) statewide survey, with Madera, Placer, Sacramento, and~~Kern,~~ Tulare~~, and Merced~~ Counties ~~in the San Joaquin Valley~~ accounting for about 6488% of the total population in April 2014~~early spring~~ (Meese 2014:6,8~~Kyle and Kelsey 2011~~). ~~The 2011~~The number of tricolored blackbirds statewide decreased from approximately 395,000 in 2008 to 259,000 in 2011, a decline of 34%~~ count represents a population decline of about 35% from the previous statewide count of 394,848 birds in 2008.~~ Breeding surveys conducted between 1994 and 2011~~over the last 15 years have~~ documented ~~wide fluctuations in~~ tricolored blackbird populations that fluctuated from just under 100,000 birds to nearly 400,000 birds~~, with populations stabilizing between 250,000 and 400,000 over the last 6 years~~ (Kyle and Kelsey 2011). From 2011 to 2014, the number of tricolored blackbirds declined by 44%, from approximately 259,000 to 145,000. The decline in tricolored blackbirds from 2008 to 2014 was 64%. While the number of tricolored blackbirds is down statewide, declines are most pronounced in the San Joaquin Valley (78% decline between 2008 and 2014) and along the Central Coast (91% decline between 2008 and 2014). Conversely, populations in Sacramento County and the Sierra Nevada Foothills have increased by 145% since 2008. Overall, the rate of decline appears to be accelerating, and additional efforts to reduce the rate of decline may be necessary (Meese 2014:6~~–~~–7, 13–15).~~The data also indicate that populations continue to decline in several areas of the state where the species was formerly common, particularly in southern California and several Central Valley counties, including San Joaquin County, where no active colonies have been documented since 2004, and in Sacramento and Fresno Counties. Thus, while population numbers statewide may have stabilized, tricolored blackbirds appear to have concentrated into a significantly smaller effective range (Kyle and Kelsey 2011).~~

Response to Comment NGO-1-7

The commenter notes that the Draft PEIR should assess impacts on western meadowlark in view of high mortalities from wind turbines in the APWRA. As noted by the commenter, western meadowlark is not a special-status species as defined in the Draft PEIR. Impacts on native non-raptors—including western meadowlark—were found in the Draft PEIR to be significant and unavoidable. Overall, the County believes that the conservation and adaptive management mitigation measures are sufficiently flexible and robust to allow the County to adapt to changing conditions in the future to ensure the conservation of species as needed.

Response to Comment NGO-1-8

The commenter states that the Draft PEIR does not appear to clearly identify a baseline for the four focal species. Please see Master Response 1, *Baseline and Determination of Significance*.

The commenter also states that the Draft EIR is unclear with respect to the data sets or reports being relied upon for the analysis. Please see Master Response 3, *Avian Mortality Rates Methodology for Existing Conditions*, regarding the methodology for determining baseline fatality rates.

Response to Comment NGO-1-9

The commenter suggests that additional clarifications are required regarding the determination of significance in the Draft PEIR. The County has prepared Master Response 1, *Baseline and Determination of Significance*, in response to this and related comments. The County believes that the clarifications provided address the commenter's concerns.

Response to Comment NGO-1-10

The commenter notes several concerns regarding the impact analysis and mitigation measures in the Draft PEIR. First, the commenter suggests that additional information regarding the local population of golden eagles, including current scientific research and studies, should be discussed. The County has added information regarding the golden eagle population status and current studies to the species account on page 3.4-37 of the Draft PEIR as indicated in Response to Comment NGO-1-3.

The commenter also notes concerns regarding population-level impacts on golden eagles and other affected species, including a consideration of cumulative impacts from other factors affecting the species over the 30-year period considered in the Draft PEIR for new projects. The County appreciates the comment but refers the commenter to comment FA-1-6 from USFWS stating that the County should limit take within the overall APWRA to fewer than 29 eagles each year to maintain the golden eagle population. Please refer to Response to Comment FA-1-6, which notes that take levels following repowering in the APWRA are estimated to be fewer than 29 eagles each year as suggested by USFWS. However, regardless of the expected reduction in impacts on golden eagles, the County has determined that repowering projects would continue to affect golden eagles as well as other migratory birds, concluding that these impacts are significant and unavoidable even after implementation of mitigation measures.

The commenter also notes that the Draft PEIR should be clear as to how mortality estimates are derived. Please see Master Response 4, *Estimated Avian Mortality Rates Methodology*, for a detailed description of the methodology used to estimate fatalities after repowering.

Response to Comment NGO-1-11

The commenter restates that program level mitigation measures do not meet the requirements for the 2007 Settlement Agreement. Please see Response to Comment NGO-1-2.

The commenter also states that the Draft PEIR is unclear with respect to the requirements of the project-specific APPs. Please see Master Response 8, *Avian Protection Plan*, for a detailed discussion of the intent and requirements of the project-specific APPs.

Response to Comment NGO-1-12

The commenter notes that Mitigation Measure BIO-11b, regarding the siting of turbines to minimize the avian mortality, should be revised to reflect greater detail, including references to other micro-siting studies. Please see Response to Comment LA-2-47 for a response to this comment and revisions to Mitigation Measure BIO-11b.

Response to Comment NGO-1-13

The commenter suggests that retrofitting power poles, as outlined in Mitigation Measure BIO-11e, should not be a primary mitigation measure. The County notes that Mitigation Measure BIO-11e is one of many avian mitigation measures intended to address avian mortality issues on a comprehensive basis. While the County understands the commenter's position that the retrofits should be conducted regardless of whether the activity is included as a mitigation measure, inclusion of the measure in the PEIR allows the County to include it in the MMRP to ensure that it is completed. The County also notes that the measure is intended to address existing infrastructure that is retained for future use after repowering. The County believes that in most cases, existing infrastructure will not be reused and will simply be removed. Moreover, the County has cited APLIC guidelines—which the County believes to be the state-of-the-art guidelines for avian protection on power lines—for conducting the retrofits. Because the commenter does not provide an alternative source to ensure that retrofits are more effective, the County is retaining the mitigation measure as written in the Draft PEIR.

Response to Comment NGO-1-14

The commenter provides suggestions for the makeup of the TAC and requests a better definition of its roles and responsibilities. The commenter also suggests that additional reporting timelines and guidelines should be incorporated into the fatality monitoring mitigation measure, and suggests that data from the monitoring should be made available to the public to ensure transparency. Please see Master Response 5, *Avian Fatality Monitoring Methodology*, and secondarily Master Response 6, *Technical Advisory Committee*. The County appreciates the commenter's suggestions and believes that they have been incorporated into the description of the TAC in Mitigation Measure BIO-11g.

Response to Comment NGO-1-15

The commenter states that Mitigation Measure BIO-11h does not sufficiently describe how losses for raptors will be fully compensated. Please see Master Response 9, *Avian Compensatory Mitigation*, for revisions to Mitigation Measure BIO-11h.

The commenter also notes that it is not clear why compensation options must be provided in 10-year increments and whether the project operator must provide such compensation for the full operating life of the project. Please see Master Response 9, *Avian Compensatory Mitigation,* for more detail regarding the compensatory mitigation increments. Compensation under Mitigation Measure BIO-11h is for the life of the project (i.e., three 10-year increments). The County believes that completing mitigation in larger increments (such as 10-year increments) will allow for the most comprehensive mitigation approach and facilitate larger and more cost-effective land acquisitions. Nevertheless, as shown in Master Response 9, *Avian Compensatory Mitigation*, Mitigation Measure BIO-11h has been revised to allow one-time adjustments within the 10-year timeframe to account for the results of fatality monitoring efforts.

Response to Comment NGO-1-16

The commenter states that implementation of Mitigation Measure BIO-11i is not clear as presented in the Draft PEIR. Please see Master Response 10, *Adaptive Management*, for revisions made to Mitigation Measure BIO-11i to enhance its clarity and to ensure that it is implementable.

The commenter also recommends that the County include language from the 2010 Agreement requiring implementation of adaptive management measures when it is determined that one or more turbines are causing a "significantly disproportionate" number of fatalities. The County appreciates this suggestion and has incorporated this concept into Mitigation Measure BIO-11i as shown in Master Response 10, *Adaptive Management*.

The commenter recommends a consideration of all practical management measures to reduce fatalities. As described in Master Response 10, Mitigation Measure BIO-11i has been revised to note that project proponents, the TAC, and the County will consider the best available measures at the time the adaptive management plans are prepared and in consideration of the specific management needs (i.e., for individual species and/or groups of species).

Response to Comment NGO-1-17

For a response to this comment, please see Master Response 11, *Bat Impacts and Mitigation*.

NGO-2—Save Mount Diablo

July 18th, 2014

Sandra Rivera
Assistant Planning Director
Alameda County Community Development Agency
Planning Department
224 W. Winton Room 111
Hayward, CA 94544

RE: Comments on the Draft Program Environmental Impact Report (dpEIR) for the Proposed Altamont Pass Wind Resource Area Repowering Project, SC# 2010082063

Dear Ms. Rivera,

Save Mount Diablo (SMD) is a non-profit conservation organization founded in 1971 which acquires land for addition to parks on and around Mount Diablo and monitors land use planning which might affect protected lands. We build trails, restore habitat, and are involved in environmental education. In 1971 there was just one park on Mount Diablo totaling 6,778 acres; today there are almost 50 parks and preserves around Mount Diablo totaling 110,000 acres. We include more than 8,000 donors and supporters.

We appreciate the opportunity to comment on the dpEIR for the proposed Altamont Pass Wind Resource Area Repowering project (APWRAR). We feel the dpEIR could be strengthened and made clearer in several areas dealing with mitigation, monitoring, and the project description. Describing a priority system for different mitigation strategies is important to analyze the potential effectiveness of these strategies. In addition, the method used to define the Program Area should be modified and the calculation of baseline avian mortality rates should incorporate new information. Issues that we feel merit changes in the dpEIR are discussed below. 1

Comments on dpEIR Section 3.4.2, Environmental Impacts to Biological Resources

Raptor Mortality Mitigation Strategy Prioritization – Conservation Easement Acquisition 2
The dpEIR recognizes on pg. 3.4-107 that a landscape-scale approach to mitigation and conservation is now central to the mitigation strategy of the Department of the Interior and would likely have the greatest mitigation benefits. We feel that if the dpEIR prioritized the options described to compensate for the proposed APWRAR's impacts on raptors, the EIR would be strengthened because the effectiveness of proposed mitigation measures would be clearer and easier to analyze. If higher priority options are more likely to be exercised, lending higher priority options more weight would permit a better analysis of the adequacy of proposed mitigation measures.

In addition, placing a high priority on the "contribute to regional conservation of raptor habitat" by acquisition of conservation easements conservation measure option (described on pg. 3.4-110), would be a big step towards achieving the County's stated hope that "a more comprehensive landscape-level approach to mitigation will be adopted to benefit a broader suite of species than might benefit from more species-specific measures."

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One of the main principles of conservation biology is that habitat connectivity helps maintain biodiversity, reduces harmful edge effects, and sustain ecological gradients and processes. If habitat becomes fragmented, the smaller areas of habitat that remain may not contain enough resources and habitat features to allow for the persistence of the full suite of species and ecological processes that were present when the landscape was whole. Plants and wildlife may also be unable to move or colonize other larger patches due to the habitat barriers that fragment the landscape, effectively creating small isolated populations that lack the resources to sustain themselves and will eventually disappear. By the same token, research shows that many species will eventually disappear from protected areas that are isolated from each other and too small to contain the full range of habitats and resources these species need to retain a viable population. 2 cont.

By making the acquisition of conservation easements located in areas that would connect existing protected areas in the Altamont a high priority option to compensate for the proposed APWRAR's impact on raptors, a highly connected landscape-level network of protected habitat could be created. Raptors, other wildlife, and threatened plant species would all benefit from this large, connected expanse of protected habitat. The mitigation of terrestrial impacts of repowering through the acquisition of conservation easements should also aim to connect already existing mitigation and other protected land.

A large number of existing conservation easements in the region have demonstrated that existing ranching practices can often continue on easement lands without endangering target biological resources. Therefore the landowners in these areas may be very open to the possibility of easements being purchased over their land.

While prioritizing the acquisition of conservation easements to connect currently protected land in the area would help protect a broad suite of species, placing a more focused species-specific measure targeting raptors as second in priority could more directly address specific threats to raptors and effectively compensate for raptor mortality. Retrofitting high-risk electrical infrastructure to compensate for the loss of raptors would be an effective species-specific complement to the broader high priority measure of acquisition of conservation easements. It would also be more effective than other options discussed under Mitigation Measure BIO 11-h, such as "contributing to raptor recovery efforts." While raptor recovery centers do great work, over-emphasizing such an option would only treat injured raptors, not remove the cause of their injury, as retrofitting electrical infrastructure would. 3

More detail should be added to the discussion of mitigation measures, and specifically conservation easements, in the EIR to fully understand how these measures would be effective. This includes how mitigation would be binding and enforceable, and with respect to conservation easements, the potential role of entities like the Alameda County Partnership for Land Conservation and Stewardship (PLCS). With regard to retrofitting electrical infrastructure, it is not entirely clear how Mitigation Measure BIO-11e and the "retrofitting high-risk electrical infrastructure" option under Mitigation Measure BIO-11h differ. Would such activities under BIO-11e only occur within areas owned by project operators, and those under BIO11-h occur outside of these areas? The dpEIR should make these differences clearer so reviewers can better understand and these measures and evaluate their potential effectiveness. 4

Incorporating Recent Data into Baseline Avian Mortality Estimates 5

Section 3.4.2 of the dpEIR discusses how baseline avian mortality rates were calculated using data from ICF International 2013[1]. These baseline estimates will are used to determine thresholds of significance

[1] ICF International. 2013. Altamont Pass Wind Resource Area Bird Fatality Study, Bird Years 2005-2011. November. M87. (ICF 00904.08.) Sacramento, CA. Prepared for Alameda County Community Development Agency, Hayward, CA.

2

NGO-2—Save Mount Diablo

and implementation of adaptive management measures for the repowering program, and are therefore extremely important calculations that should be based on the best available science. We note that another more recent study (ICF International 2014[2]) is available that could provide useful data for the baseline fatality rate calculations. ICF International 2014 includes data from bird year 2012 that is not included in the earlier study used to calculate baseline avian mortality rates. ICF International 2014 indicates increases in the 2012 annual adjusted fatality rate relative to 2011 for three of the four focal species (American kestrel, Golden eagle, and red-tailed hawk). In addition, 2012 appears to have been the deadliest year out of all years analyzed for American kestrel and Golden eagle (Table 3-3 in ICF International 2014). The EIR should include a discussion of this new information and its implications for the APWRAR. 5 cont.

Bird and Bat Mortality Monitoring Clarification on Seasonal Shutdowns

Mitigation Measure BIO-11g describes the postconstruction avian fatality monitoring for repowering projects. While it states that a technical advisory committee (TAC) will be formed to oversee monitoring and consult on adaptive management measures, it does not specify the TAC's role in the potential implementation of seasonal shutdowns should mortality rates exceed the established baseline. Would the TAC recommend implementation of seasonal shutdowns, or would it simply recommend that adaptive management measures be taken, which may or may not include seasonal shutdowns? Adding more detail on this point would strengthen and improve this mitigation measure. 6

Micro-siting and General Siting Near Brushy Peak Regional Preserve

We are encouraged that the dpEIR specifically addresses micro-siting of turbines in Mitigation Measure BIO-11b. We suggest modifying the language in this measure to make it clearer that micro-siting will occur and that the purpose of micro-siting will be to minimize avian collision risk. For example, we suggest changing the sentence on pg. 3.4-104 from "All project proponents will use the best information available to site turbines to reduce avian collision risk…" to "All project proponents will use the best information available to site all turbines to minimize avian collision risk…" This change would improve the dpEIR and allow a better understanding of what the mitigation measure proposes and how effective it may be. In addition, the EIR should include text specifying that models used to site turbines in locations that minimize avian collision risk specifically take into account the large size and height of the new turbines that are proposed for repowering. Adding a graphic to the dpEIR such as the one below (Figure 1) would also provide an example of how micro-siting would likely occur (though not necessarily using that specific model). 7

[2] ICF International. 2014. Altamont Pass Wind Resource Area Bird Fatality Study, Bird Years 2005-2012. Final. M101. (ICF 00904.08.) Sacramento, CA. Prepared for Alameda County Community Development Agency, Hayward, CA.

3

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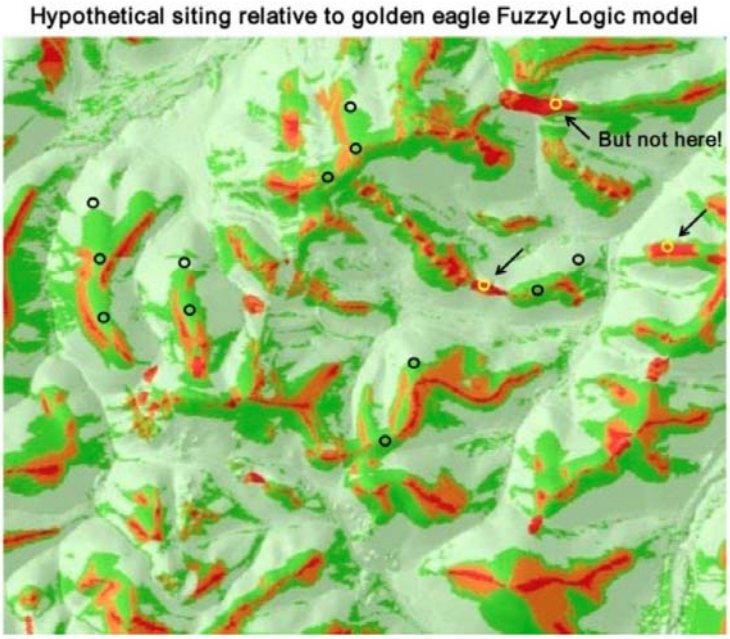

Figure 1. Hazard siting model (specifically, a Fuzzy Logic model) developed for golden eagle. *Image taken from a* presentation[3] prepared by Dr. Shawn Smallwood, Dr. Lee Neher, and Dr. Douglas Bell. Green areas are areas where wind turbines could be placed that present low risk to golden eagle. Red color indicates areas of high risk to golden eagle. Black circles indicate potential wind turbine locations in low risk areas. Yellow circles indicate potential wind turbine siting locations that should be avoided.

It is also extremely important that the EIR detail the oversight that will occur throughout the repowering process to ensure that micro-siting using the best available science does actually occur. This would be associated with ensuring that Mitigation Measure BIO-11b is binding and enforceable. A simple way to accomplish this would be to have County staff conduct inspections of wind energy repowering sites with siting model maps to ensure that turbines are being placed where models indicate low risk of striking focal raptor species. 8

Regarding general siting in the Altamont, we believe that providing a turbine-free buffer between Brushy Peak Regional Preserve and the APWRA would enhance the value of the Preserve by reducing mortality of birds that use the Preserve due to collisions with wind turbines. The EIR could provide program-level direction for the wind turbines adjacent to the preserve (identified in ICF International 2014 as BLOB 13 and consisting of model Kenetech 56-100 wind turbines) that if and when these turbine arrays undergo repowering, no turbines should be placed on the western half of these turbine strings. Larger fourth-generation turbines could still be placed on the eastern turbine strings farther from the Preserve. This would allow wind energy repowering in that cluster but also provide a buffer between the turbines and the Preserve. 9

[3] http://www.altamontsrc.org/alt_doc/p200_smallwood_2_17_11_presentation_on_siting_hazard_model.pdf

4

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Comments on dpEIR Section 2.1, Program Location and Program Area

Inappropriate Use of the NCCP/HCP Boundary to Define Program Area 10

Section 2.1 in the dpEIR describes how a new boundary for the APWRA was developed during the incomplete NCCP/HCP process, and that this "revised boundary" is used to define the program area. It also states that "repowered wind turbines may be constructed anywhere within this revised boundary."

We believe this is an inaccurate and inappropriate way to define the Program Area for the APWRAR because the NCCP/HCP process was never completed and the "revised boundary" the dpEIR refers to was never finalized or put through a public review process. As Figure 1-2 (pictured below) in the dpEIR clearly shows, the Program Area includes large areas to the east and south of the current limits of the Altamont Pass Wind Resource Area. To propose that such a large area (≥30% or more of the Alameda County portion of the current Altamont Pass Wind Resource Area) could be opened up to wind energy development without public review is a major flaw that the EIR must correct. The EIR should be changed to redefine the Program Area and the area where repowered wind turbines may be constructed as the current official and accepted limits of the Altamont Pass Wind Resource Area.

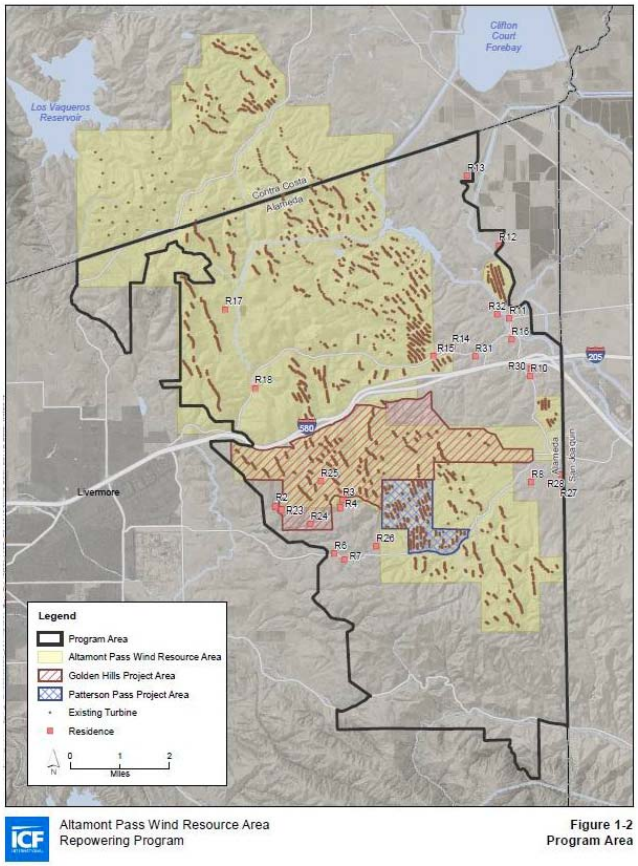

Figure 1-2 from dpEIR. Program Area.

5

NGO-2—Save Mount Diablo

Comments on dpEIR Section 2.4.5 and Other Sections Discussing Site Reclamation

Mechanisms to Ensure Reclamation Occurs

While the dpEIR states that wind energy companies will prepare site reclamation plans to be approved by the County after repower, there are currently many old turbine pads and foundations that have not been in use for years just sitting in the Altamont. In some cases funding shortages are blamed for failure to remove old infrastructure that is no longer being used. To ensure that site reclamation proceeds as it is intended, the EIR should specify a time by which site reclamation should be achieved and financial plans that ensure sufficient funding is available for companies to reclaim sites. For example, the EIR could specify all sites will be reclaimed within one year of decommissioning and describe a mechanism in which wind power companies pay into an account, perhaps managed by the County, that is expressly maintained for the purpose of site reclamation post-repower and that receives funds while projects are still in operation before the funds are actually needed. 11

We recognize that the site specific reclamation plans are useful and necessary, but the EIR must explain how site reclamation mitigation measures will be binding and enforceable. One aspect of that is ensuring there will be sufficient funds to reclaim sites when they are no longer in operation. The mechanism described above is just one way this could work. The EIR could describe several options, but each should be enforceable to avoid in the future the current situation that exists at some sites in the Altamont, where foundations and turbine pads that should have been reclaimed long ago for some reason remain. 12

Comments on dpEIR Section 2.6, Specific Project Descriptions

Adding Detail on Rotor-swept Area for the Golden Hills and Patterson Pass Projects 13

We are encouraged that the dpEIR proposes to follow the general repowering trend of replacing many old turbines with substantially fewer new ones. Specifically, the Golden Hills project would reduce the number of turbines after repowering by approximately 93%, and the Patterson Pass project by about 96%.

However, while the dpEIR includes information on the number of turbines to be removed and installed for the Golden Hills and Patterson Pass projects, it does not include information on the change in rotor-swept area that repowering of these projects would cause. It is possible that even though the number of turbines would be greatly reduced through repowering, due to their larger size, the rotor-swept area (the "danger-zone" for birds and bats) of the third-and fourth-generation turbines to be installed in the projects would stay the same or even increase.

While the dpEIR references studies that suggest windfarms utilizing larger third – and fourth-generation turbines may have significantly less impact on birds than first- and second-generation turbines, other studies suggest the possibility that the newer, larger turbines may actually have greater impacts on birds (Loss et al. 2013[4]). Regardless, the dpEIR itself recognizes that "considerable uncertainty remains regarding the effects of repowering on avian and bat mortality." Therefore, all the metrics that could affect the mortality of birds and bats due to repowering, including changes in the rotor-swept area of project turbines after repowering, should be included and analyzed in the EIR.

[4] Loss, S.R, T. Will, P. P. Marra. 2013. Estimates of bird collision mortality at wind facilities in the contiguous United States. Biological Conservation 168: 201-209.

6

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We note that the dpEIR already provides information on the hub height of the new turbines, and suggests that the new turbine rotors would sweep an area above the heights most used by birds. However, calculations of how the amount of rotor-swept area existing in the Golden Hills and Patterson Pass project areas would change after repowering are not included. A detailed accounting of changes in rotor-swept area for these projects, and clear direction in the EIR that environmental review documents for future projects currently analyzed at the program level should also include such information, would provide the public, agency reviewers, and commenters a better sense of what the APWRAR proposes and its potential effects on birds. 13 cont.

The role of turbine height, rotor-swept area, and other turbine characteristics in bird collisions with wind turbines is currently a topic of intense research (Loss et al. 2013, Smallwood 2013[5]), and the APWRAR should provide much- needed high quality data to aid research efforts. Including more detailed information on rotor-swept area would permit a satisfactory analysis of the APWRAR's impacts on birds as well as facilitate current and future scientific research.

Thank you for the opportunity to provide comments.

Sincerely,
Juan Pablo Galván
Land Use Planner

[5] Smallwood, K.S. 2013. Comparing bird and bat fatality-rate estimates among North American wind-energy projects. Wildlife Society Bulletin 37: 19-33.

7

E.5.2 Comment Letter NGO-2—Save Mount Diablo

Response to Comment NGO-2-1

The commenter summarizes several issues covered in detail in the comment letter. Responses to individual comments are provided below.

Response to Comment NGO-2-2

The commenter expresses the opinion that the mitigation options contained in Mitigation Measure BIO-11h should prioritize conservation easement acquisition. Because this is a program-level EIR and will cover a number of repowering projects over a long period of time, the County intends to build in flexibility to address specific project characteristics as projects are proposed and reviewed in the future. Please see Master Response 9, *Avian Compensatory Mitigation*, for revisions to Mitigation Measure BIO-11h.

Response to Comment NGO-2-3

The commenter expresses additional opinions regarding the prioritization of mitigation, such as the options contained in Mitigation Measure BIO-11h. Please see Master Response 9, *Avian Compensatory Mitigation*, for revisions to Mitigation Measure BIO-11h to clarify the County's conservation approach. The commenter also notes that some options, such as contributions to raptor recovery efforts, which are effective and necessary for saving individual raptors, may not be as effective as some other measures because they do not remove the underlying cause of the injury. The County generally agrees with this comment and has revised Mitigation Measure BIO-11h to remove less effective options as shown in Master Response 9, *Avian Compensatory Mitigation*.

Response to Comment NGO-2-4

The commenter suggests that more detail should be added to mitigation measures to specify how the mitigation would be binding and enforceable and to describe the potential role of entities such as the Alameda County Partnership for Land Conservation and Stewardship (PLCS). The environmental analysis for future repowering projects would be tiered from this PEIR. Individual projects would undergo review and mitigation would be applied, as appropriate, for the anticipated impacts of the specific projects. Specific projects, if approved, would include a mitigation monitoring and reporting program (MMRP), which would specify the mitigation measures and monitoring requirements and responsibilities to ensure that the measures are completed as designed. While the PLCS may be an appropriate entity to facilitate land conservation, there may be others, and the County does not intend to limit conservation easement holders in the PEIR.

The commenter also questions how Mitigation Measure BIO-11e and the option of retrofitting of high-risk electrical infrastructure presented in Mitigation Measure BIO-11h are different. Mitigation Measure BIO-11e requires project proponents to retrofit any existing facilities within their specific project boundaries to minimize impacts on all raptors. The measure essentially recognizes that some facilities may be reused after repowering and requires them to be retrofitted to be avian safe. The number and extent of these facilities is unknown and would depend on the specific project designs. The retrofitting option under Mitigation Measure BIO-11h is primarily focused on eagles and is meant to serve as part of a package of comprehensive measures to mitigate impacts on raptors and other birds, including golden eagles. In accordance with the USFWS ECP Guidelines,

numerous poles in areas with a high risk for electrocutions are required to be retrofitted. The County accordingly believes that both measures are necessary to avoid and minimize impacts on raptors.

Response to Comment NGO-2-5

Please see Master Response 3, *Avian Mortality Rates Methodology for Existing Conditions*, for a response to this comment.

Response to Comment NGO-2-6

Please see Master Responses 6, *Technical Advisory Committee*, and Master Response 10, *Adaptive Management*, for response to issues raised in this comment. Specific information pertaining to ADMMs for bats is presented in Master Response11, *Bat Impacts and Mitigation*.

Response to Comment NGO-2-7

The commenter suggests several changes to Mitigation Measure BIO-11b to clarify that turbines will be placed through careful micro-siting with the purpose of minimizing avian collision risk. Please see Response to Comment FA-1-14 and revisions of Mitigation Measure BIO-11b as shown in Response to Comment FA-1-14. Please also see Response to Comment LA-1-62, which provides further information on the process that will be used to review siting efforts by the TAC.

Response to Comment NGO-2-8

The commenter emphasizes the importance of oversight during the micro-siting process using the best available science. Please see Response to Comment LA-1-62, which provides further information on the process that will be used by the TAC to review siting efforts.

Response to Comment NGO-2-9

The commenter suggests that the County should establish a buffer between Brushy Peak and the APWRA. Please see Response to Comment LA-1-6 for a response to this comment.

Response to Comment NGO-2-10

Please see Master Response 2, *Program Area Boundary*, for a response to this comment.

Response to Comment NGO-2-11

The County requires reclamation and financial assurances for completion of reclamation as conditions of approval of CUPs for windfarms. Required reclamation is described in detail in *Reclamation Activities* on pages 2-22 and 2-23 of the Draft PEIR.

Response to Comment NGO-2-12

The County requires reclamation and financial assurances for completion of reclamation as conditions of approval of CUPs for windfarms. Required reclamation is described in detail in *Reclamation Activities* on pages 2-22 and 2-23 of the Draft PEIR.

Response to Comment NGO-2-13

The commenter notes that rotor-swept area is an important metric when comparing potential impacts on birds, and states that all the metrics associated with repowering that could affect the mortality of birds and bats—including changes in the rotor-swept area of project turbines—should be included and analyzed in the PEIR at both the program and project levels.

While common sense would suggest that the amount of air space swept by a rotor should play a role in bird and bat fatality, in a meta-analysis of fatality data from multiple wind energy sites in North America, Barclay et al. (2007:384) looked at blade diameters ranging from 18 to 90 meters and found no significant correlation with bat or bird fatality.

Complicating the matter, the existing rotor-swept area in the APWRA comprises a variety of turbine models, with a variety of operational status. The characteristics of existing turbines (including rotor-swept area) are provided in Appendix A-2, *Existing Turbines in the Altamont Pass Wind Resource Area*, of the PEIR. The rotor-swept areas of proposed repowered turbines are described in *Fourth-Generation* on page 2-4 of the Draft PEIR.

Moreover, an analysis of *all* metrics that *could* affect bird and bat fatality would bring the PEIR into the realm of speculation, and pursuant to CEQA Guidelines Section 15145 is beyond the scope of this document. Accordingly, the County believes that no additional analysis regarding comparison of rotor-swept area is necessary.

E.6 General Public

GP-1—Robert Cooper

To: Sandy Rivera
From: Robert Cooper, 4000 Dyer Rd., Livermore, CA (bobcooperhorse@gmail.com)
Subject: APWRA Comments
Date: 6/30/2014

Please include my comments in the APWRA EIR. Thanks.

- I support the repowering of the Altamont wind resource because it may reduce the avian kill and because many of the second generation wind turbines are still in service way beyond their designed lifetime. They are decrepit! The fourth generation wind turbines eliminate many problems with earlier technologies. 1

- For approval of such large repowering projects as Golden Hills and Patterson Pass, an appropriately large amount of land should be covered by a conservation easement as mitigation. Such conservation easements were created for mitigation of the Waste Management expansion and the Vasco Winds wind turbine project. The environment, plants, animals, insects, and birds deserve protection from future disruptive projects on some land. As noted in the DEIR, there are four future wind turbine projects, totaling 250 MW that will disrupt the environment. 2

- Siting of second-generation wind turbines west of Dyer Rd. residences has been problematic. In particular, wind turbines are located approximately 800' from the Mueller and Crocker homes, and 650' from a rental on the Walker Ranch. In the case of Mueller and Crocker, the wind turbines are about 400' above the homes as well. The elevation of the wind turbines above the Walker rental is substantial. 3

  To me, this seems too close though I do not know what the setback requirements were when the wind turbines were installed in the late 1980's. With the setbacks in the DEIR and the much, much taller wind turbines to be used in the repowering, wind turbines will be prohibited on most of the ridge line to the west of Dyer Rd. homes.

  Taking information from 2.3.1, Turbine Types, Fourth Generation, the THH ranges from 400' (262+135) to 520' (315+205). The houses near Dyer Rd. are at 800' elevation and the west ridge is at 1200' elevation, a difference of 400' which requires an addition 40% setback. The setbacks range from 1360' (1200+160) for small wind turbines to 1768' (1560+208) for large.

  Most of the wind turbines west of my house (4000 Dyer Rd.) are closer than 1360 ft. Further north, one of the Walker Ranch rentals is only 650' from the closest windmill. Further south, the houses are closer to the ridgeline than mine.

- Figure 1-2, Program Area: Multiple features are missing. All the residences on Dyer Rd. do not appear on the map. Also, Dyer Rd. does not appear on the map and should. There are 16 residences and rentals on Dyer Rd. and the Walker Ranch. There are three properties on Altamont Pass Rd. that are missing, from the Vieux's near the beginning of Dyer Rd. to the entrance of Waste Management. Also, there is a long string of wind turbines missing from this map. They are to the west of Dyer Rd. A Google map of the area is attached to help correct this situation. 4

GP-1—Robert Cooper

- Very predictable power outages occur on Dyer Rd. usually in the fall with the first rain. Dust that collects on the above ground power equipment short out with the addition of rain. Conversations with PGE confirm this regular occurrence. If repowering occurs on Dyer Rd., this problem should be fixed. Last outage occurred on June 26, 2014. 5

- In the DEIR velocity is given in meters per second. I suggest the document give velocity in both meters per second and miles per hour, a unit that is more familiar to most people in this country. (1 meter/sec = 2.23694 miles/hour) 6

- I have been concerned about the removal of wind turbines in the Dyer Rd. area, especially foundations. I have recently noticed that removal is taking place to the east of Dyer Rd. on Waste Management property. When removal of wind turbines occurs to the west of Dyer Rd. both the first and second-generation foundations must be removed. 7

- Section 3.1.2: Carroll Rd., which connects Altamont Pass Rd. with Flynn Rd. should be added to the list of roads. 8

- Hold a yearly public meeting to review avian kills attributed to wind turbines and measures that wind power companies are taking to reduce kills or mitigate. 9

- Considering that a home burned to the ground last year on Dyer Rd., special attention should be given to clearing grass and brush from all work areas during the fire season. An adequate number of fire extinguishers must be available at the work site. When the house burned on Dyer Rd., the response time from CalFire was a disappointing 30 minutes. 10

- Though the rotational speed of new wind turbines is much slower that the old turbines. The longer blade length makes the tip-of-blade speed of new and old turbines roughly comparable. YouTube video clips show cases of slow rotating long bladed turbines killing eagles: https://www.youtube.com/watch?v=8NAAzBArYdw 11

- Page 3.4-118: "Discourage prey for raptors" is an idea that is amusing for residents in the Altamont. A major prey for raptors is the ground squirrel. Please let us know how to discourage ground squirrels, which are exceedingly common in the Altamont. We will gladly help. 12

GP-1—Robert Cooper

Missing Features on Figure 1-2

E.6.1 Comment Letter GP-1—Robert Cooper

Response to Comment GP-1-1

The commenter's support of APWRA repowering is acknowledged.

Response to Comment GP-1-2

The commenter expresses his support for the creation of large conservation easements as mitigation. Conservation easements are included in the Draft PEIR as one of a menu of mitigation options for implementation by the County in Mitigation Measure BIO-11h.

Response to Comment GP-1-3

The County generally concurs with the estimated distances indicated by the commenter, but has determined that the maximum difference in elevation between the residences and the turbines is no more than 300 feet. The County's Standard Windfarm Conditions, adopted in late 1983, required a minimum *safety* setback of a turbine from a dwelling unit of 500 feet, or three times the total height of the windmill (to the topmost reach of the windmill blade), or four times the windmill height if its height were two or more times the height of the windmill above the dwelling unit. A separate *noise* setback condition disallowed turbines from being less than 1,000 feet from a residence "in an upwind direction (generally southwesterly to west-southwesterly), nor closer than 300 feet in any other direction…" This condition also allowed the setback to be reduced by up to 50% if a "written, notarized and recorded concurrence of the affected property owner is filed with this record." Other noise setback conditions provided a procedure to investigate and resolve reasonable noise complaints.

The existing turbines on this ridgeline are estimated to be no more than 110 feet tall, and therefore would only have had to satisfy the minimum setback of 500 feet, even if the setback were based on four times the turbine height. Although some of the turbines are less than 1,000 feet in an upwind direction from some Dyer Road residences (as currently required by the *noise* setback), it appears that these turbines on the ridge west of Dyer Road were approved in August 1983 or as early as 1981 (Conditional Use Permits C-3989, C-4383 and C-4325), before the noise setbacks were established (December 1983).

Although further research into the history of the turbines' approval, the construction dates of the residences, and other matters could be informative, the commenter is understood to be more concerned about the placement of new turbines on this ridgeline in the future. As shown in Table 2-2 in the Draft PEIR, new turbines will continue to be required to provide a setback equal to three times the turbine height, and 10% of total turbine height in additional setback per 100 feet of "elevation differential," unless there is a notarized agreement or an easement recorded on the affected property, and approved by the Planning Director. Table 2-2 on page 2-13 of the Draft PEIR has been updated to provide more clarity, such as to provide for a measurable setback increase for elevation differences of tens of feet, not just units of one hundred feet, as may have appeared the case. Please refer to Response to Comment LA-1-21 for the revised table.

Response to Comment GP-1-4

Figure 1-2 has been revised in response to the comment regarding identification of residences in the figure and is included here and in Chapter 1 of the Final PEIR.

Response to Comment GP-1-5

The commenter expresses concern about existing power outages. Because this comment is not directed to the analysis of environmental effects of the proposed projects or program, no response in this document is appropriate.

Response to Comment GP-1-6

The commenter requests that wind velocity in the PEIR be presented in miles per hour rather than meters per second. Wind velocity is commonly expressed in meters per second; this unit of measurement is the industry standard for wind energy technology. The commenter presents a conversion factor to convert meters per second to miles per hour.

Response to Comment GP-1-7

As noted in on pages 2-11 and 2-12 in Section 2.45, *Site Reclamation*, of the Draft PEIR, the 2005 CUPs required that wind companies remove all facilities and restore properties to preinstallation conditions if windfarm operations cease, unless the resource agencies (i.e., USFWS and CDFW) require that the facilities be left in place. Agency staff have indicated that in some cases the habitat disturbance involved in facility removal may outweigh the benefit of removing foundations. In such cases, the County Planning Department may see fit to waive these reclamation requirements, particularly where reclamation activities could have adverse effects on water quality (through erosion) or special-status species (such as disruption of suitable habitat for burrowing owls, California tiger salamanders, or California red-legged frogs).

Response to Comment GP-1-8

Comment noted. While Carroll Road does indeed traverse a portion of the program area, it is not a County-designated scenic route as specified in the Scenic Route Element of the County's General Plan. The list on page 3.1-4 in Section 3.1.2 of the Draft PEIR to which the commenter refers only lists those roads in the program area that are identified in the Scenic Route Element.

Response to Comment GP-1-9

The commenter states that yearly public meetings should be held to review avian kills attributed to wind turbines and measures to reduce or mitigate kills. As noted in Master Response 6, the County will establish a TAC for the purpose of reviewing proposed monitoring and mitigation plans, fatality monitoring reports, and adaptive management plans. The TAC meetings will be open to the public.

Response to Comment GP-1-10

The commenter raises the issue of fire safety during operation of wind energy generation projects. Fire safety is addressed in Section 3.8, *Hazards and Hazardous Materials*, of the Draft PEIR, and specifically in Impact HAZ-8a-1, HAZ-8a-2, HAZ-8b, and HAZ-8c.

Response to Comment GP-1-11

The issue of turbine-related avian mortality is addressed in detail in Section 3.4, *Biological Resources*, of the Draft PEIR.

Response to Comment GP-1-12

The commenter remarks on the abundance of ground squirrels in the APWRA. The intention of Mitigation Measure BIO-11f is only to discourage prey in the area surrounding turbines through placing gravel around the tower foundations and placing boulder piles away from the turbines. California ground squirrels provide essential burrow habitat for many special-status and common wildlife species and are an important prey item for various raptors and mammals. No revisions to the PEIR are necessary.

GP-2—Altamont Winds, LLC

Altamont Winds LLC

21 July 2014

Alameda County Community Development Agency
Planning Department
224 West Winton Avenue
Hayward, California 94544
sent via e-mail to sandra.rivera@acgov.org

Attention: Ms. Sandra Rivera, Assistant Planning Director

Subject: Comments to the Draft Programmatic Environmental Impact Report, Altamont Pass Wind Resource Area Repowering

Dear Sandi:

Altamont Winds LLC (**"AW"**) appreciates the opportunity to provide comments on the Draft Programmatic Environmental Impact Report (**"DPEIR"**) for the Altamont Pass Wind Resource (**"APWRA"**) repowering. AW is the developer of the Summit Wind repower project, to be located entirely within the Alameda County portion of the APWRA. Our comments are as follows:

1. The DPEIR must include a quantitative evaluation of wind energy benefits to fully inform decision makers of the environmental effects of the repowering program. 1

While the County has often remarked on its recognition and appreciation of the importance of wind energy as a source of clean energy, the benefits of wind energy, for all practical purposes, have been ignored in APWRA permitting processes. Put more specifically, there has never been an accounting for wind energy benefits in the environmental impacts calculus undertaken in regard to wind farm permitting in Alameda County. As a result, wind energy facilities in Alameda County are required to undertake the same mitigation measures that a project of similar scale, yet devoid of similar environmental benefits, would be required to undertake.

AW believes that the DPEIR must present, in a real and quantifiable manner, the benefits of each repowered APWRA wind energy facility, including the impacts of clean, renewable wind energy on wildlife. These benefits must also be considered and factored into the mitigation calculus of the DPEIR and subsequent project specific Environmental Impact Reports tiering off the DPEIR.

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15850 Jess Ranch Road, Tracy, California 95377
phone 925.455.7251 • e-mail ajr@powerworks.com • www.powerworks.com

GP-2—Altamont Winds, LLC

The best available evidence on the quantification of avian health benefits resulting from air pollution offsets attributable to APWRA wind farms is the McCubbin and Sovacool Study, *Health, Wildlife And Climate Benefits Of The 580 MW Altamont Winds Farm*. The relevant results of the Study have been cited in peer-reviewed journals, including, most recently, the Journal of Integrative Environmental Sciences.[1] See study attached as Exhibit 1. 1 cont.

Compared to natural gas power plants operating in the area the Altamont Pass, the 417 MW project area analyzed in the DPEIR would offset over 1.7 billion pounds of greenhouse gases and harmful fine particulate matter each year of operation. Over twenty years, it is estimated that taking this pollution out of the air will prevent over two thousand instances of cardio-pulmonary illness and premature mortality. Over that same period, nearly 60,000 avian fatalities due to air pollution and climate change will also be avoided. The wind farms need no fuel or water to generate electricity, which, compared to locally operating natural gas power plants, will save over 4 billion cubic feet of natural gas and 346 million gallons of water per year of wind farm operation.

The DPEIR should be amended to explicitly allow for consideration of quantitative benefits of wind energy, particularly the benefits of wind energy on birds, as defined in the CEQA guidelines.

2. The DPEIR must set forth reasonable shadow flicker impact thresholds and mitigation measures 2

Impact AES-5a-1 and Mitigation Measure AES-5 of the DPEIR indicate that any degree of shadow flicker is per se a significant impact requiring mitigation to reduce that impact to a less than significant level. Specifically, the DPEIR mandates that no turbine will be allowed to be sited in a location where preconstruction modelling indicates that a residence or business will be exposed to 30 minutes per day or 30 days per year of shadow flicker. Furthermore, the DPEIR requires that any exposure to shadow flicker within those limitations must be mitigated.

AW does not agree that Impact AES-5a-1 sets a reasonable threshold of significance, nor does AW believe that mitigation is warranted for de minimus exposure to shadow flicker.

Modern wind turbines are prone to create shadow flicker because they are significantly larger than previous generations of wind turbines. By increasing turbine height and rotor diameter, each turbine can produce more clean energy for more hours of the year and at lower wind speeds, all while reducing the risk of collision to avian wildlife. In fact, it is precisely these benefits of larger turbine design that are compelling repowering in the Altamont Pass. If, however, the County establishes guidelines that disqualify large wind turbines on the basis of their height from being installed in certain areas, as the shadow flicker portions of the DPEIR inadvertently do, then the County is inadvertently undermining the benefits of repowering and underutilizing a State- and County-designated wind resource without adequate justification.

[1] Sovacool, BK. "The Avian and Wildlife Costs of Fossil Fuels and Nuclear Power," ***Journal*** *of Integrative Environmental Sciences* 9(4) (December, 2012), pp. 255-278; *see also* McCubbin, D and BK Sovacool. "The Hidden Factors That Make Wind Energy Cheaper than Natural Gas in the United States," *Electricity Journal* 24(9) (November, 2011), pp. 84-95; Sovacool, BK. "The Avian Benefits of Wind Energy: A 2009 Update," *Renewable Energy* 49 (January, 2013), pp. 19-24; McCubbin, D and BK Sovacool. "Quantifying the Health and Environmental Benefits of Wind Power to Natural Gas," *Energy Policy* 53 (February, 2013), pp. 429-441.

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15850 Jess Ranch Road, Tracy, California 95377
phone 925.455.7251 • e-mail ajr@powerworks.com • www.powerworks.com

GP-2—Altamont Winds, LLC

Therefore, AW believes that a sensible revision is warranted for the DPEIR's treatment of shadow flicker impacts. 2 cont.

First, based on a thorough survey of available data on global shadow flicker exposure standards, AW recommends that the appropriate threshold of significance for shadow flicker is exposure to a residence in excess of 30 minutes within a 24-hour period or 30 hours per year. (This is in contrast to 30 days per year of any length of shadow flicker, as stated in the DPEIR). Any exposure to shadow flicker below this threshold should be considered less than significant.

Second, where preconstruction analysis predicts shadow flicker in excess of this threshold, mitigation measures that may be required to reduce shadow flicker exposure at a given residence to less than 30 hours per year should include:

1. micro-siting wind turbines to reduce shadow flicker exposure at an affected residence;

2. obtaining a waiver of impacts from affected residents;

3. putting in place physical barriers, at the wind operator's expense, such as vegetative plantings, window blinds or curtains, or window awnings, with the understanding that installation of any physical barriers to be made on the affected landowner's property would require consent to such installations by the landowner; or,

4. in the event the above mitigation measures are insufficient to reduce shadow flicker exposure to less-than-significant levels, operational changes, such as, temporary curtailment during periods of shadow flicker exposure, may be required.

3. DPEIR section Impact AES-2 and Mitigation Measure AES-2a concerning visually sensitive areas should clearly state that a turbine site is "new" only in those areas not previously developed with wind turbines, regardless of whether turbines presently operate at that location. 3

Citing a number of policies announced in the East County Area Plan (**ECAP**"), the County states in the DPEIR section on aesthetic impacts that "the County would be obligated to disallow new turbine structures from being located in [visually sensitive] areas," (DPEIR 3.1-15, emphasis added) and that, "[f]or those areas with existing older turbines, the replacement of the many existing smaller and older turbines with proportionally far fewer and less intrusive fourth-generation turbines would serve Policies 170 and 215 of the East County Area Plan, and serve to protect and enhance scenic values." (DPEIR pg. 3.1-16). Further, the DPEIR at Mitigation Measure AES-2a (DPEIR 3.1-16) states that new turbines will be disallowed, except "along ridgelines that have not previously been developed with wind turbine strings," unless certain conditions are shown.

For the avoidance of doubt, the DPEIR should clarify that where new turbines are installed along ridgelines that have previously been developed with wind turbine strings, even where such old-generation turbines have been removed, the visual impact is less than significant for purposes of all Alameda County policies related to preserving visually sensitive view sheds.

This interpretation of the County policies seems the only reasonable interpretation given the unique attributes of the APWRA. For instance, turbines have been continually removed from ridgelines along the Altamont Pass for decades and for differing reasons. It would be arbitrary

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15850 Jess Ranch Road, Tracy, California 95377
phone 925.455.7251 • e-mail ajr@powerworks.com • www.powerworks.com

to choose some point in time at which a ridgeline's visual sensitivity is deemed to be restored, and indeed the County makes no attempt to do so. Further, developers may be repowering in an area where they do not presently operate wind turbines and thus have no control over another company's decision to maintain or remove existing structures. 3 cont.

More generally still, it is important that the County maintain an overall balance of interests in assessing the visual impacts of proposed wind farms in the Altamont Pass. To interpret the ECAP policies strictly would be to unintentionally foreclose any wind development in the APWRA, which is one of only three designated wind resource areas in California. Consider that the many public roads and trails through and along the APWRA are at elevations that offer expansive views across vast swaths of the Altamont Pass. Prohibiting structures, particularly tall structures that must be sited atop ridgelines, simply because they can be seen from a public hiking trail, would run counter to the goals of the ECAP. Given the County's stated goal of "maximize[ing] the production of wind generated energy and" its policy to allow for the continued operation and redevelopment of existing wind farm facilities (ECAP Policy 169, cited in the DPEIR at 3.1-7), the County must take a permissive approach when interpreting visual impacts policies.

4. The raptor conservation measures mitigation increment should be shortened to five years or less. 4

Suggested in Mitigation Measure BIO-11h are a number of compensatory mitigation measures for the loss of raptors, including eagles. According to this measure as outlined in the DPEIR (Section 3.4-108), compensatory mitigation is to be provided in ten-year increments based on the number of estimated fatalities. This mitigation increment should be shortened to bring it in line with current mitigation increments being suggested by other agencies and avian monitoring programs and in order to reduce the financial and functional burdens a ten-year increment places on wind developers.

The U.S. Fish and Wildlife Service ("**USFWS**"), in the recently announced, first-of-its-kind Eagle Take Permit granted to a wind farm in California, required mitigation based on projected avian take to be paid in five-year increments. The County requirement set forth in the DPEIR should not exceed the five-year standard presently being utilized by this Federal agency. Introducing the possibility for disparity between regulators invites confusion and potential conflict in terms of funding logistics and monitoring obligations. Without justification, the County's requirement for a ten-year increment seems arbitrary and unreasonable.

A ten-year mitigation increment also imposes a significantly greater burden on operators as compared to a five-year mitigation increment, for a number of reasons. First, in economic terms, doubling the increment requires doubling the upfront compensatory payment, which affects the feasibility of projects operating on already thin margins. The ten-year increment will also reduce funds available for investment in developing new conservation measures and strategies.

Second, an extended mitigation increment could lock operators into ineffective or unworkable mitigation schemes. This is of particular concern where, at least for the first of these increments, the conservation and mitigation program will be designed with no project-specific monitoring data to support the program.

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15850 Jess Ranch Road, Tracy, California 95377
phone 925.455.7251 • e-mail ajr@powerworks.com • www.powerworks.com

GP-2—Altamont Winds, LLC

AW appreciates that the DPEIR acknowledges the evolving nature of avian conservation and mitigation strategies and seeks to induce operators to invest in new measures to reduce avian fatalities at wind farms. Yet the imposition of a ten-year commitment to a conservation and mitigation program ensures that it will be difficult to alter a mitigation strategy to make it more effective until ten years has elapsed (unless one undertakes what is surely to be a lengthy and potentially adversarial modification process). 4 cont.

Please contact us if you have any questions.

Sincerely,

Altamont Winds LLC

Andrew J. Roth
General Counsel

5
15850 Jess Ranch Road, Tracy, California 95377
phone 925.455.7251 • e-mail ajr@powerworks.com • www.powerworks.com

E.6.2 Comment Letter GP-2—Altamont Winds, LLC

Response to Comment GP-2-1

The County agrees that wind energy has benefits; however, it is not the purpose of the PEIR to demonstrate the benefits of wind energy. Moreover, the referenced report does not address the impacts of the proposed program or projects. Finally, the benefits of cleaner air to the resources addressed in the PEIR are not quantifiable, nor do they relate directly to the issues evaluated under CEQA; consequently, indirect benefits cannot be considered to offset potential direct impacts.

Response to Comment GP-2-2

The commenter states that Impact AES-5a-1 and Mitigation Measure AES-5 must set forth reasonable shadow flicker impact thresholds and mitigation measures and that measures to restrict turbine installation based on height would undermine the advantages of repowering. The commenter recommends that the appropriate threshold of significance for shadow flicker is exposure to a residence in excess of 30 minutes within a 24-hour period or 30 hours per year, in contrast to 30 days per year of any length of shadow flicker. The County has determined that the 30-minute/30-day threshold was ambiguous and open to misinterpretation. Accordingly, Mitigation Measure AES-5 has been revised as shown below.

The commenter also states that the measure include micro-siting, the option for residential waivers, provision of window awnings and landscaping, and operational curtailments to reduce flicker effects. Mitigation Measure AES-5 already contains measures to adjust turbine siting and operational curtailments to reduce flicker affects. Opaque window coverings are also included, but the measure has been revised to include awnings and landscaping to be provided by the applicant. Obtaining a waiver of impacts from affected residents is not mitigation under CEQA. To address these comments, the text of Mitigation Measure AES-5 on page 3.1-28 of the Draft PEIR has been revised as shown below.

Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker

~~Shadow~~ Where shadow flicker could result from the installation of ~~taller~~ wind turbines ~~that could be sited~~proposed near residences (i.e., within 500 meters [1,640 feet] in a generally east or west direction to account for seasonal variations), ~~residents and businesses. Accordingly, Alameda County will require that~~ the project applicant will prepare a graphic model and study to evaluate shadow flicker impacts on nearby ~~(i.e., no more than 500 meters from the subject turbine)~~ residences ~~and businesses~~. No shadow flicker in excess of 30 minutes in a given day or 30 ~~days~~ hours in a given year will be permitted. If it is determined that existing setback requirements as established by the County are not sufficient to prevent shadow flicker impacts on residences ~~and businesses~~, Alameda County will require an increase in the required setback distances to ensure that residences ~~and businesses~~ are not affected. If any residence ~~or business~~ is affected by shadow flicker within the 30-minute/30-~~day~~hour thresholds, the applicant will implement measures to minimize the effect, such as relocating the turbine~~,~~ ; providing opaque window coverings, window awnings, landscape buffers, or a combination of these features to reduce flicker to acceptable limits for the affected receptor~~,~~ ; or shutting down the turbine during the period shadow flicker would occur. Such measures may be undertaken in consultation with owner of the affected resident ~~or business owner~~ce. If the shadow flicker study indicates that any given turbine would result in shadow flicker exceeding the 30-minute/30-~~day~~ hour thresholds and the property owner is not amenable to window coverings, window awnings, or landscaping and the turbine cannot be shut down during the period of shadow flicker, then the turbine ~~would~~ will be relocated to reduce the effect to acceptable limits.

The following citation has been added to the Section 3.1.4, *References Cited*, in Section 1.3, *Aesthetics*, of the Final PEIR.

Department of Energy and Climate Change. No date. *Update of UK Shadow Flicker Evidence Base.* Final report. Prepared by Parsons Brinckerhoff, Newcastle Upon Tyne, UK.

Response to Comment GP-2-3

The commenter states that Impact AES-2 and Mitigation Measure AES-2a concerning visually sensitive areas should clearly state that a turbine site is "new" only in those areas not previously developed with wind turbines, regardless of whether turbines presently operate at that location. The commenter feels that Alameda County policies should be interpreted to indicate that visual impacts would be less than significant where new turbines are installed along ridgelines that have previously been developed with wind turbine strings, even where such old-generation turbines have been removed, because of the attributes of the APWRA and the County's goal to maximize wind production energy.

In preparation of the PEIR, the County interprets and analyzes applicable regulations and policies as written. Policy 105 of the ECAP lists the ridgelines above Vasco Road and the ridgelines surrounding Brushy Peak north of Livermore as sensitive viewsheds and states that the County shall preserve these visually sensitive ridgelines "largely in open space use." Policy 106 states that:

> Structures may not be located on ridgelines or hilltops or where they will project above a ridgeline or hilltop as viewed from public roads, trails, parks and other public viewpoints unless there is no other site on the parcel for the structure or on a contiguous parcel in common ownership on or subsequent to the date this ordinance becomes effective. New parcels may not be created that have no building site other than a ridgeline or hilltop, or that would cause a structure to protrude above a ridgeline or hilltop, unless there is no other possible configuration.

Policy 107 states that "The County shall permit no structure (e.g., housing unit, barn, or other building with four walls) that projects above a visually-sensitive major ridgeline." As written, these policies can be interpreted to suggest that the County has determined that past planning measures did not protect visually sensitive ridgelines and has accordingly set forth these policies to establish this protection. However, at this time and as described in the Draft PEIR, no turbines are proposed to be sited in the areas described in this comment as being of concern. The County has not undertaken studies that would support identification of specific areas where turbine development should be prohibited. As stated in Policy 106, siting of structures should not occur "unless there is no other site on the parcel for the structure or on a contiguous parcel in common ownership on or subsequent to the date this ordinance becomes effective." This provision does not negate the impact or mean that the impact is less than significant, based on County policies; however, the provision establishes the County's discretion to allow for such structures to be sited within areas identified as visually sensitive even if doing so would result in significant impacts. In addition, as described in detail in Section 1.1.2, *Program-Level Analysis and Tiering*, on page 1-1 of the Draft PEIR, specific projects proposed in the future would undergo project-level environmental analysis tiered from this PEIR.

Response to Comment GP-2-4

The commenter expresses the opinion that the period for calculating compensatory mitigation should be shorter than 10 years. The County selected the 10-year timeframe to provide more support for the acquisition of conservation lands, which can require substantial up-front costs. The

amount actually required of the operators would be based on the actual impacts as described in the mitigation measure.

Please see also Response to Comment NGO-1-15.

GP-3—EDF Renewable Energy

EDF Renewable Energy
4000 Executive Parkway, Ste 100
San Ramon, CA 94583
T : 925.242.0168

July 21, 2014

Sandra Rivera
Assistant Planning Director, Alameda County
224 West Winton Avenue, Rm. 111
Hayward, CA 94544

Re: Altamont Pass Wind Resource Area Repowering Draft PEIR

Dear Ms. Rivera:

Thank you for the opportunity to provide comments on the Altamont Pass Wind Resource Area Repowering Draft Program Environmental Impact Report. We request that you consider the following comments in preparing the Final EIR.

Mitigation Measure AQ-2b on page 3.3.36 calls for a suspension of excavation, grading and excavation activities when wind speeds exceed 20 mph. We request that the County adjust this requirement to 25 mph and also designate the Livermore Municipal Airport as the location where wind speed is measured. Wind energy is generated in the Altamont Pass Wind Resource Area (APWRA) because of the windy conditions. Suspending construction during conditions that are considered to very windy elsewhere, but not very windy in the APWRA, would impede prompt completion of construction activities. Designating the nearest commercial airport, here the Livermore Municipal Airport, as the location for measuring wind speed would make it is easier for both the County and the wind companies and their construction contractors to adhere to this measure. 1

Mitigation Measure BIO-11c on page 3.4-104 calls for a no less than 95 foot differential between the ground surface and the lowest point of the turbine blade (the tip of the blade in the 6:00 position.) Some of the blades on the larger, state of the art turbines (such as the Vestas 3.3 MW turbine) are, for example, approximately 92 feet from the ground surface. To allow greater flexibility in turbine choice and, in particular, to allow use of fewer larger turbines, which recent research demonstrates results in lower avian mortality than use of more, smaller turbines, we request that the County allow a distance of no less than 90 feet between the ground surface and the tip of the blade. 2

Mitigation Measure AQ-2b on page 3.3-36 and Mitigation Bio-2 on page 3.4-61 call for washing of trucks and equipment prior to leaving the site. We suggest that the requirement to wash trucks be deleted because of the extreme drought that California is currently experiencing and because the requirement to water roadways and install dust control zones (i.e. wood chips, rock, etc., which are designed to dislodge dust and dirt from vehicles driven over them) at all site access points is sufficient to control dust on vehicles and tires. 3

We appreciate your attention to these comments and look forward to working with you to finalize the EIR. This Program EIR will facilitate the repowering of wind projects in the

www.edf-re.com

GP-3—EDF Renewable Energy

EDF Renewable Energy
4000 Executive Parkway, Ste 100
San Ramon, CA 94583
T: 925.242.0168

APWRA and result in a reduction of avian mortality as well as a continued source of zero emissions energy for California.

Sincerely,

Brian Sarantos
Project Manager

www.edf-re.com

E.6.3 Comment Letter GP-3—EDF Renewable Energy

Response to Comment GP-3-1

The commenter requests revising Mitigation Measure MM-AQ-2b to change the wind speed requirement from 20 mph to 25 mph and to designate the Livermore Municipal Airport as the location where wind speed is measured. The wind speed requirement identified in Mitigation Measure MM-AQ-2b is a standard BAAQMD mitigation requirement for projects with construction emissions in excess of their significance thresholds. The text in the second bullet of Mitigation Measure AQ-2b on page 3.2-26 of the Draft PEIR has been revised in response to this comment as shown below.

- All excavation, grading, and/or demolition activities will be suspended when average wind speeds exceed 20 mph, as measured at the Livermore Municipal Airport.

Response to Comment GP-3-2

The commenter suggests that Mitigation Measure BIO-11c on page 3.4-104 of the Draft PEIR be revised to reduce the lowest point of the turbine blade. The County considered this comment and reviewed the available information, as well as comment LA-2-50 from the Scientific Review Committee on the same topic. Based on input from the SRC, the County agrees that because the measure in the Draft PEIR was based on a single study in a different WRA, it is not necessarily applicable to the APWRA. Consequently, Mitigation Measure BIO-11c has been revised as shown in Response to Comment LA-2-50.

Response to Comment GP-3-3

The commenter requests a change to the mitigation included in Mitigation Measure MM-AQ-2b, which also addresses Impact BIO-2. The truck washing described in the mitigation measure is a standard measure that addresses both dust impacts and noxious weed impacts. For this reason, a substitute measure as described by the commenter would not address the impacts identified in the PEIR. Measures such as containing and recycling wash water may be available to reduce water use at specific job sites.

GP-4—Golden Hills, LLC

GOLDEN HILLS WIND, LLC
JULY 21, 2014

TABLE 1

DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT: COMMENTS FROM GOLDEN HILLS WIND, LLC

Comment No.	Section	Page	Draft PEIR Text	Proposed Changes to Text *(red font indicates edit previously provided to County)*	Notes/Comments to Alameda County	
Global edits/comments:						
1.	All text referring to Golden Hills project acreage.	2-25	The Golden Hills project area encompasses approximately 4,528 acres on 38 parcels.	The Golden Hills project area encompasses approximately ~~4,528~~ 4,580 acres on 38 parcels.	Please use revised project boundary shape files provided with this submittal for all figures depicting proposed Golden Hills project. The revised boundary falls within the scope of the original project analysis included in the Draft PEIR and does not result in an increase in any impacts beyond those disclosed in the Draft PEIR. No new significant environmental impacts would result from the project change and no new mitigation measures are proposed.	1
Project Description:						
2.	2.2.1	2-1	Windfarm uses have been permitted in the APWRA since the early 1980s with such CUPs, and the currently active CUPs (last approved in 2005 for continued operation of the windfarms, and amended in 2007) are set to expire in September 2018. Those CUPs mandated that the windfarm operators would repower their windfarms by that expiration date.	Windfarm uses have been permitted in the APWRA since the early 1980s with such CUPs, and the terms of the currently active CUPs (last approved in 2005 for continued operation of the windfarms, and amended in 2007) are ~~set to expire in~~ through September 2018. ~~Those CUPs mandated that the windfarm operators would repower their windfarms by that expiration date.~~	Comment provided to County on 3/17. The Draft PEIR has failed to respond to this comment. See suggested revised text.	2
3.	2.3.1 Turbine Types	2-3, 2-4.	In contrast, evaluation of mortality data collected at windfarms around the country (including in the APWRA) have suggested that current-generation turbines may lead to a substantial increase in bat	In contrast, evaluation of mortality data collected at windfarms around the country (including in the APWRA) have suggested that current-generation turbines may lead to ~~an substantial~~ increase in	Comment provided to County on 3/17. The Draft PEIR has failed to fully respond to this comment. "substantial" was previously	3

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			mortality (Barclay et al. 2007). Moreover, because of the scarcity of valid comparative data, considerable uncertainty remains regarding the effects of repowering on avian and bat mortality.	bat mortality (Barclay et al. 2007). Moreover, because of the scarcity of valid comparative data, ~~considerable~~ uncertainty remains regarding the effects of repowering on avian and bat mortality.	"exponential" See suggested revision. These terms are not quantifiable and are subjective.	3 cont.
4.	2.4.5 Site Reclamation	2-11	Reclamation activities entail returning lands disturbed by infrastructure installation or removal to preproject conditions. Some facilities (e.g., roadways, turbine footings) may be left in place if doing so is deemed to be more protective of natural resources than removal. At each reclamation site, the entire site is contour graded (if necessary) to conform with the natural surrounding topography and reseeded with an appropriate seed mixture, unless the resource agencies request that contouring not be undertaken. No soil is removed from the site. Figure 2-9 shows reclamation of a turbine pad site. Exceptions to returning a site to preinstallation conditions may be made, upon approval of the County Planning Department, if such reclamation activities would or could create water quality issues (e.g., erosion) or if the activities may adversely affect special-status species (e.g., burrowing owl burrow complexes, upland habitat for California red-legged frog or California tiger salamander). Moreover, CDFW and USFWS have suggested that it may sometimes be preferable to avoid regrading roads or removing foundations to avoid disruption of such habitats. In such cases, the County Planning Department could change reclamation requirements accordingly.	Reclamation activities entail returning lands disturbed by infrastructure installation or removal to preproject conditions. Some facilities (e.g., roadways, turbine footings, underground collection lines) may be left in place if doing so is deemed to be more protective of natural resources than removal. At each reclamation site, the entire site is contour graded (if necessary and environmentally feasible) to conform with the natural surrounding topography, stabilized, and and reseeded with an appropriate seed mixture, unless the resource agencies request that contouring not be undertaken. No soil is removed from the site. Figure 2-9 shows reclamation of a turbine pad site. Exceptions to returning a site to preinstallation conditions may be made, upon approval of the County Planning Department, if such reclamation activities would or could create water quality issues (e.g., erosion) or if the activities may adversely affect special-status species (e.g., burrowing owl burrow complexes, upland habitat for California red-legged frog or California tiger salamander). Moreover, CDFW and USFWS have suggested that it may sometimes be preferable to avoid regrading roads or removing foundations to avoid disruption of such habitats. In such cases, the County	See suggested revision. Please use this standard language throughout PEIR and/or refer to Section.	4

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				Planning Department could change reclamation requirements accordingly		
5.		2-17	Grading may be performed in some instances to match the surrounding contours, but it will be avoided where appropriate to minimize and avoid disturbance of wildlife burrows that have adapted to existing grade cuts. New grading over existing foundations, equipment pads, or finger roads may be necessary for the installation of new access roads and foundation pads for repowered turbines.	As described in Section 2.4.5, ~~G~~grading may be performed ~~in some instances to match the surrounding contours, but it will be avoided where appropriate to minimize and avoid disturbance of wildlife burrows that have adapted to existing grade cuts~~. New grading over existing foundations, equipment pads, or finger roads may be necessary for the installation of new access roads and foundation pads for repowered turbines.	Comments provided to County on 4/18. Draft PEIR failed to respond to comment. See suggested revisions. Since this is the Project Description, and subsection is describing existing wind turbine removal, specifics on when grading wouldn't occur doesn't necessarily add value to section and would potentially be confusing.	5
6.	Postconstruction Reclamation	2-23	As described in Section 2.4.4, the 2005 CUPs require that wind companies remove all facilities and restore properties to preinstallation conditions once the windfarm is decommissioned. .... Reclamation activities involve returning lands disturbed by infrastructure installation or removal to preproject conditions. At each reclamation site, the entire site is contour graded (if necessary) to conform to natural surrounding topography, stabilized, and reseeded with an appropriate seed mixture. No soil is removed from the site. Figure 2-9 shows reclamation of a turbine pad site. Exceptions to returning a site to preinstallation conditions may be made, with approval of the County Planning Department, if such reclamation activities would or could create water quality issues (e.g., erosion) or if the activities may adversely affect special-status species (e.g., burrowing owl burrow	As described in Section ~~2.4.4~~ 2.4.5, the 2005 CUPs require that wind companies remove all facilities and restore properties to preinstallation conditions once the windfarm is decommissioned. .... Reclamation activities involve returning lands disturbed by infrastructure installation or removal to preproject conditions. Some facilities (e.g., roadways, turbine footings, underground collector lines) may be left in place if doing so is deemed to be more protective of natural resources than removal. At each reclamation site, the entire site is contour graded (if necessary and environmentally beneficial) to conform to natural surrounding topography, stabilized, and reseeded with an appropriate seed mixture. No soil is removed from the site. Figure 2-9 shows reclamation of a turbine pad site. Exceptions to returning a site to preinstallation conditions may be made, with approval of the County	Comments provided to County on 4/18. Draft PEIR failed to respond to comment. See suggested edits. Revisions focused on consistency with language in Section 2.4.5.	6

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			complexes, upland habitat for California red-legged frog or California tiger salamander). Roads that are not necessary after turbine removal and that are not wanted by landowners would also be reclaimed unless a resource agency (CDFW or USFWS) determines that reclamation would be detrimental to special-status species. In addition, some roads widened for construction may be returned to preproject widths and widened areas reclaimed. Road reclamation may include contour grading to conform to natural surrounding ground levels and backfilling road cuts on slopes.	Planning Department, if such reclamation activities would or could create water quality issues (e.g., erosion) or if the activities may adversely affect special-status species (e.g., burrowing owl burrow complexes, upland habitat for California red-legged frog or California tiger salamander). Roads that are not necessary after turbine removal and that are not wanted by landowners would also be reclaimed unless a resource agency (CDFW or USFWS) determines that reclamation would be detrimental to special-status species. CDFW and USFWS have indicated that regrading of roads should be avoided in most cases to avoid disruption of such habitats. In such cases, the County Planning Department would limit reclamation activities to removal of pads, equipment, and overhead power lines, and would authorize reseeding but not regrading of existing road beds. In addition, some roads widened for construction may be returned to preproject widths and widened areas reclaimed. Road reclamation may include contour grading to conform to natural surrounding ground levels and backfilling road cuts on slopes.		6 cont.
7.	Table 2-3, line 2	2-25	99A-1760-1-4[a]	~~99A-1760-1-4[a]~~	Please delete from table. No acreage is identified for this parcel, and this parcel is not within project boundary.	7
8.	2.6.1	2-27	Golden Hills would likely select a turbine with characteristics similar to those of the GE 1.7 XLe model: a 1.7 MW turbine with a hub height of 80–96 meters (262–315 feet), a	Golden Hills would likely select a turbine with characteristics similar to those of the GE 1.7 XLe model: a 1.7 MW turbine with a hub height of 80–96 meters (262–315 feet), a	A tower with a hub height of 80 meters and rotor diameter of 100 meters, would have a minimum distance from ground to rotor tip of 30 meters (98	8

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			rotor diameter of 100–115 meters (328–377 feet), a total height up to 153 meters (502 feet), and a minimum distance from ground to rotor tip at 6:00 position of 38 meters (125 feet).	rotor diameter of 100–115 meters (328–377 feet), a total height up to 153 meters (502 feet), and a minimum distance from ground to rotor tip at 6:00 position of ~~38~~ 30 meters (~~125~~ 98 feet).	feet). Dimensions provided in DEIR are for tower with 96 meter hub height and 115 meter rotor diameter (larger model).	8 cont.
9.	Golden Hills - Existing Facilities	2-27	Existing roads and other disturbed areas not needed for the proposed project's new turbines would be decommissioned and recontoured, as appropriate, to maintain slope stability. Following recontouring, surface soils would be prepared for planting and revegetated with seed stock. Temporary erosion control measures would be implemented to maintain topsoil and revegetation.	As described in Section 2.4.5, e~~E~~xisting roads and other disturbed areas not needed for the proposed project's new turbines would be decommissioned ~~and recontoured,~~ contour graded (if necessary and environmentally beneficial), stabilized and reseeded with an appropriate seed mix, ~~as appropriate~~ to maintain slope stability. ~~Following recontouring, surface soils would be prepared for planting and revegetated with seed stock.~~ Temporary erosion control measures would be implemented to maintain topsoil and revegetation.	Comments provided to County on 4/18.Draft PEIR failed to respond to comment. See suggested edits.	9
10.	Collector Substation	2-30	Modular battery storage unit(s) could be installed within enclosed structures located within the proposed facility's substation area. The units would be inspected and maintained on an as-needed basis, in accordance with the facility's operational requirements and applicable regulations.	Modular battery storage unit(s) could be co-located to ~~installed within enclosed structures located within~~ the proposed facility's substation area. The units would be inspected and maintained on an as-needed basis, in accordance with the facility's operational requirements and applicable regulations.	Please see Attachment 1 for a description of the battery storage. Please revise PEIR description with this supplemental information.	10
11.	Golden Hills - Construction Staging Areas	2-33	Following completion of construction activities, the contractor would restore the temporary construction staging areas. The gravel surface would be removed and the areas would be recontoured, stockpiled topsoil would be replaced, and the area would be seeded with an approved mixture of grasses.	Following completion of construction activities, the contractor would restore the temporary construction staging areas. The gravel surface would be removed and the areas would be contour graded (if necessary and environmentally beneficial) to conform with the natural topography, stabilized and reseeded ~~recontoured, stockpiled topsoil would be replaced, and the~~	Comments provided to County on 4/18. Draft PEIR failed to respond to comment. See suggested edits.	11

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				~~area would be seeded~~ with an ~~approved~~ appropriate seed mixture ~~of grasses~~.		11 cont.
12.	Roadway Improvements.	2-43	Improvements to Patterson Pass Road (straightening, widening, or improving the turn into the project area) may be necessary to facilitate the delivery of turbines and associated parts. These improvements would be undertaken within the existing County right of way and/or within the project area, which abuts Patterson Pass Road. Improvements to Jess Ranch Road (widening the existing turn) may also be required to facilitate the turn into the project area.	Improvements to public and private roads ~~Patterson Pass Road~~ (straightening, widening, or improving the turn into the project area) may be necessary to facilitate the delivery of turbines and associated parts. These improvements would be undertaken within the existing County right of way and/or within the project area~~, which abuts Patterson Pass Road. Improvements to Jess Ranch Road (widening the existing turn) may also be required to facilitate the turn into the project area~~.	Comment provided on 3/17. Draft PEIR failed to respond to comment. See suggested edit.	12
Aesthetic Resources						
13.	3.1.2	3.1-9	The northernmost portion of the project area, just south of I-580, is characterized by rolling, grassy terrain with turbines, transmission lines, and access roads. In addition to the turbines, this area is dotted with industrial facilities, residences, and stock ponds. The area is also characterized by steep cuts in the hills throughout to accommodate Jess Ranch Road, Flynn Road, and the railroad tracks.	The northernmost portion of the project area, just south of I-580, is characterized by rolling, grassy terrain with turbines, transmission lines, and access roads. In addition to the turbines, this area is dotted with industrial facilities, residences, and stock ponds. The area is also characterized by steep cuts in the hills throughout to accommodate ~~Jess Ranch Road,~~ Flynn Road, and the railroad tracks.	Comment provided via email on 3/25. Draft PEIR failed to respond to comment. Please delete reference to Jess Ranch Rd. .	13
14.	3.1.2 Table ES-1	3.1-20	**MM AES-3: Do not construct turbines on the undeveloped portion of the Golden Hills project area along Flynn Road** In order to comply with Policy 170 of Alameda County's East County Area Plan, and to prevent significant impacts on visual character, no turbines will be located on the undeveloped portion of the Golden Hills project area		This MM was discussed during the 3/13/14 meeting, and per that discussion between NextEra and County, please delete.	14

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			along Flynn Road (Figure 3.1-2).			14 cont.
15.	3.1.2 Table ES-1	3.1-27	**Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker.** Shadow flicker could result from the installation of taller wind turbines that could be sited near residents and businesses. Accordingly, Alameda County will require that the project applicant model and evaluate shadow flicker impacts on nearby residences and businesses. No shadow flicker in excess of 30 minutes in a given day or 30 days in a given year will be permitted. If it is determined that existing setback requirements as established by the County are not sufficient to prevent shadow flicker impacts on residences and businesses, Alameda County will require an increase in the required setback distances to ensure that residences and businesses are not affected. If any residence or business is affected by shadow flicker within the 30-minute/30-day thresholds, the applicant will implement measures to minimize the effect, such as relocating the turbine, providing opaque window coverings for the affected receptor, or shutting down the turbine during the period shadow flicker would occur. Such measures may be undertaken in consultation with the affected resident or business owner. If the shadow flicker study indicates that any given turbine would result in shadow flicker exceeding the 30-minute/30-day thresholds, the turbine would be relocated to	**Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker.** Shadow flicker could result from the installation of taller wind turbines that could be sited near residents and businesses. Accordingly, Alameda County will require that the project applicant model and evaluate shadow flicker impacts on nearby residences and businesses. Upon complaint from affected residence, the Applicant will conduct shadow flicker study and if warranted, may be required to reduce shadow flicker through operational adjustments to avoid potentially significant impact. ~~No shadow flicker in excess of 30 minutes in a given day or 30 days in a given year will be permitted. If it is determined that existing setback requirements as established by the County are not sufficient to prevent shadow flicker impacts on residences and businesses, Alameda County will require an increase in the required setback distances to ensure that residences and businesses are not affected. If any residence or business is affected by shadow flicker within the 30-minute/30-day thresholds, the applicant will implement measures to minimize the effect, such as relocating the turbine, providing opaque window coverings for the affected receptor, or shutting down the turbine during the period shadow flicker would occur. Such measures~~	There is currently no established threshold for evaluating impacts resulting from shadow flicker; this MM is overly conservative. We suggest that the County address shadow flicker using similar methods to address other public nuisances.	15

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			reduce the effect to acceptable limits.	~~may be undertaken in consultation with the affected resident or business owner. If the shadow flicker study indicates that any given turbine would result in shadow flicker exceeding the 30-minute/30-day thresholds, the turbine would be relocated to reduce the effect to acceptable limits.~~		15 cont.
16.	3.1.2	3.1-31	**Impact AES-6b: Consistency with state and local policies— Golden Hills Project (less than significant with mitigation)** Under the Golden Hills Project, the County would be obligated to comply with measures set forth to protect visual resources along scenic roadways and open space areas identified for protection, as detailed in the Scenic Route and Open Space Elements of the Alameda County General Plan (Alameda County 1966). In addition, the County is obligated to comply with measures set forth in the ECAP to protect visual resources such as sensitive viewsheds, streets and highways, scenic highways, and areas affected by windfarms (Alameda County 2000). The turbines would be neutral and nonreflective (e.g., dull white or light gray) so as to blend with the surroundings. However, the proposed project would still introduce large, visually obtrusive turbines within existing viewsheds of scenic viewsheds in proximity to sensitive viewers and residences. Implementation of Mitigation Measures AES-2a, AES-2b, AES-2c, and AES-3, and AES-5 would reduce this impact to a less-than significant level.	**Impact AES-6b: Consistency with state and local policies— Golden Hills Project (less than significant with mitigation)** Under the Golden Hills Project, the County would be obligated to comply with measures set forth to protect visual resources along scenic roadways and open space areas identified for protection, as detailed in the Scenic Route and Open Space Elements of the Alameda County General Plan (Alameda County 1966). In addition, the County is obligated to comply with measures set forth in the ECAP to protect visual resources such as sensitive viewsheds, streets and highways, scenic highways, and areas affected by windfarms (Alameda County 2000). The turbines would be neutral and nonreflective (e.g., dull white or light gray) so as to blend with the surroundings. ~~However~~ While, the proposed project would replace smaller existing turbines with larger, more ~~still introduce large,~~ visually obtrusive turbines within existing viewsheds, there will be considerably fewer turbines as a result of repowering. ~~of scenic viewsheds in proximity to sensitive viewers and residences.~~ Implementation of Mitigation	Comment provided on 3/17. Draft PEIR failed to respond to comment. AES-6 does not specify existence of current windfarms as the baseline. See suggested language	16

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				Measures AES-2a, AES-2b, AES-2c, and AES-3, and AES-5 would reduce this impact to a less-than significant level.		16 cont.
17.	Figure 3.1-1		4. Midway Substation from Patterson Pass Road looking east.	4. ~~Midway~~ PG&E Tesla Substation from Patterson Pass Road looking east.	Emailed comment from NextEra on 3/25. Draft PEIR failed to respond to comment. Please clarify that substation is a PG&E substation.	17
Agricultural Resources						
18.	3.2.2	3.2-7 and 3.2-9	Impact AG-1a-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use—Alternative 1: Repowering Program 417 MW (less than significant with mitigation)		Comment provided on 3/17. Draft PEIR failed to respond to comment. AG-1 does not take into account that repowering would reduce the number of turbines, and therefore may put more land back into agriculture, which could be subtracted out of the land newly taken from agriculture. Suggest adding a sentence stating that removal of old turbines will restore __ acres for agricultural use.	18
Air Quality						
19.	Section 3.3.1	3.3-6	In addition, the SJVAB is downwind of the project site some emissions that are emitted at the project site within the SFBAAB would likely drift into the SJVAB through a process known as transport.	In addition, <u>because</u> the SJVAB is downwind of the project site, some emissions that are emitted at the project site within the SFBAAB would likely drift into the SJVAB through a process known as transport.	Current sentence appears to be missing some wording.	19
20.	Section 3.3.1, Table 3.3-3	3.3-13	Entry for Federal Designation for O3 (1-hour).	Replace "-[a]" with <u>"(No Federal Standard)[a]"</u>	Suggest replacement to be consistent with other table entries while maintaining footnote.	20
21.	3.3.2	3.3-26	**MM AQ-2b: Reduce construction-related air pollutant emissions by implementing measures based on BAAQMD's Additional Construction Mitigation Measures.**	**MM AQ-2b: Reduce construction-related air pollutant emissions by ~~implementing~~ <u>complying with</u> measures ~~based on~~ <u>in</u> BAAQMD's Additional Construction Mitigation Measures.**	Comment provided on 3/17. Draft PEIR failed to respond to comment.	21
22.	3.3.2	3.3-26	All exposed surfaces will be watered at a frequency adequate to maintain minimum soil moisture of	All exposed surfaces will be watered at a frequency adequate <u>to ensure visible dust is avoided.</u> ~~to~~	See suggested edit.	22

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			12%. Moisture content can be verified by lab samples or moisture probe.	~~maintain minimum soil moisture of 12%. Moisture content can be verified by lab samples or moisture probe~~.		22 cont.
23.	3.3.2	3.3-26	Wind breaks (e.g., trees, fences) will be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50% air porosity.	~~Wind breaks (e.g., trees, fences) will be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50% air porosity.~~	Planting trees within construction areas is onerous and infeasible.	23
24.	3.3.2	3.3-38	Impact AQ-3a-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)—Repowering Program Alternative 2: 450 MW (significant and unavoidable for construction and less than significant for operation)		Comment provided on 3/17. Draft PEIR failed to respond to comment. Unclear why the daily emissions for new operations would be unchanged. Presumably the new state-of-the-art turbines would require less maintenance and therefore fewer trips than the existing turbines. Please add language confirming that operations would result in improved air quality. See, p. 3.3-15: "daily and annual emissions of criteria pollutants associated with operational activities are anticipated to be the same under the program as under existing condition; consequently, they would not result in a significant contribution to existing air quality violations."	24
Biological Resources						
25.	3.4.1	3.4-7	As an alternative to the NCCP called for in the Settlement Agreement, the County has developed a draft *Avian Protection Program* (APP) to provide a framework and process for wind energy projects to comply with applicable statutes (e.g., MBTA and BGEPA) through the repowering process.	As an alternative to the NCCP called for in the Settlement Agreement, the County has prepared this PEIR with mitigation measures to provide a framework and process to permit wind projects in the APRA and to promote conservation measures to benefit avian species. ~~developed a draft *Avian Protection Program* (APP) to provide a framework and process for wind energy projects to comply with applicable statutes (e.g., MBTA and BGEPA) through~~	Per discussion between NextEra and County, please delete all references and discussion in PEIR to Avian Protection Program and NCCP. See suggested language.	25

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				~~the repowering process.~~		25 cont.
26.	Table 3.4-2	3.4-9			Table 3.4-9 summarizes approximate acreages of land cover in project area. Total acreage is shown as 4,480. Please see Comment #1.	26
27.	Table 3.4-8	3.4-50	Table shows total impacts to be: Perm: 125.34 Temp (Const+Decom): 240.96 And includes the following footnotes: [a] These impact estimates do not include offset of land cover that is returned to natural conditions from removal of facilities and roads. Therefore, acreages of impacts are likely to be lower than those shown here. [b] Acreage was not calculated for impacts on drainages. Typically, such impacts are measured in linear feet; these impacts will be quantified when design drawings are available.		Per the Project Description submitted to County on 12/18/2013, the anticipated temporary impact from the Golden Hills project is 414 acres.	27
28.	3.4.2	3.4-57	**Mitigation Measure BIO-1a: Conduct surveys to determine the presence or absence of special-status plant species** Project proponents will conduct surveys for the special-status plant species within and adjacent to all project sites. All surveys will be conducted by qualified biologists in	**Mitigation Measure BIO-1a: Conduct surveys to determine the presence or absence of special-status plant species** Project proponents will conduct surveys for the special-status plant species within and adjacent to all project sites. All surveys will be conducted by qualified biologists in	Comment provided on 3/17. Draft PEIR failed to fully respond to comment.	28

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			accordance with the appropriate protocols. Special-status plant surveys will be conducted in accordance with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Game 2009) during the season that special-status plant species would be evident and identifiable—i.e., during their blooming season. No more than 3 years prior to ground-disturbing repowering activities and during the appropriate identification periods for special-status plants (Table 3.4-4), a qualified biologist (as determined by Alameda County) will conduct field surveys within decommissioning work areas, proposed construction areas, and the immediately adjacent areas to determine the presence of habitat for special-status plant species. The project proponent will submit a report documenting the survey results to Alameda County for review and approval no less than 1 year prior to conducting any repowering activities. The report will include the location and description of all proposed work areas, the location and description of all suitable habitat for special-status plant species, and the location and description of other sensitive habitats (e.g., vernal pools, wetlands, riparian areas). Additionally, the report will outline where additional species and/or habitat-specific mitigation measures are required. This report will provide the basis for any applicable	accordance with the appropriate protocols. Special-status plant surveys will be conducted in accordance with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Game 2009) during the season that special-status plant species would be evident and identifiable—i.e., during their blooming season. No more than 3 years prior to ground-disturbing repowering activities and during the appropriate identification periods for special-status plants (Table 3.4-4), a qualified biologist ~~(as determined by Alameda County)~~ will conduct field surveys within decommissioning work areas, proposed construction areas, and the immediately adjacent areas to determine the presence of habitat for special-status plant species. The project proponent will submit a report documenting the survey results to Alameda County for review and approval prior to conducting any repowering activities. The report will include the location and description of all proposed work areas, the location and description of all suitable habitat for special-status plant species, and the location and description of other sensitive habitats (e.g., vernal pools, wetlands, riparian areas). Additionally, the report will outline where additional species and/or habitat-specific mitigation measures are required. This report will provide the basis for any applicable permit applications		28 cont.

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			permit applications where incidental take of listed species may occur.	where incidental take of listed species may occur.		28 cont.
29.	3.4.2	3.4-59	All project proponents will avoid or minimize temporary and permanent impacts on special status plants that occur on project sites and will compensate for impacts on special-status plant species. Although all impacts on large-flowered fiddleneck, diamond-petaled California poppy, and caper-fruited tropidocarpum will be avoided, impacts on other special-status plant species will be avoided to the extent feasible, and any unavoidable impacts will be addressed through compensatory mitigation. Where avoidance of impacts on a special-status plant species is infeasible, loss of individuals or occupied habitat of a special-status plant species occurrence will be compensated for through the acquisition, protection, and subsequent management in perpetuity of other existing occurrences at a 2:1 ratio (occurrences impacted: occurrences preserved). The project proponent will provide detailed information to the County and CDFW on the location of the preserved occurrences, quality of the preserved habitat, feasibility of protecting and managing the areas in-perpetuity, responsibility parties, and other pertinent information. If suitable occurrences of a special-status plant species are not available for preservation, then the project will be redesigned to remove features that would result in impacts on that species.	All project proponents will avoid or minimize temporary and permanent impacts on special status plants that occur on project sites and will compensate for impacts on special-status plant species through appropriate mitigation as determined during consultation with USFWS and/or CDFW. Although all impacts on large-flowered fiddleneck, diamond-petaled California poppy, and caper-fruited tropidocarpum will be avoided, impacts on other special-status plant species will be avoided to the extent feasible, and any unavoidable impacts will be addressed through compensatory mitigation. ~~Where avoidance of impacts on a special-status plant species is infeasible, loss of individuals or occupied habitat of a special-status plant species occurrence will be compensated for through the acquisition, protection, and subsequent management in perpetuity of other existing occurrences at a 2:1 ratio (occurrences impacted: occurrences preserved). The project proponent will provide detailed information to the County and CDFW on the location of the preserved occurrences, quality of the preserved habitat, feasibility of protecting and managing the areas in-perpetuity, responsibility parties, and other pertinent information. If suitable occurrences of a special-status plant species are not available for preservation, then the project will be redesigned to~~	This MM exceeds what is required under ESA for endangered plant species. There are no federal or state requirements for plant species protection on private lands. In addition, not all special status plant species are equally protected and require a take permit/BO. As written, those other plant species would require compensatory mitigation. Please delete MM.	29

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				~~remove features that would result in impacts on that species~~		29 cont.
30.	3.4.2	3.4-63 through -74, 3.4-77 through 80.	Impact BIO-3a-1: Potential mortality of or loss of habitat for vernal pool branchiopods and curved-footed hygrotus diving beetle—Alternative 1: Repowering Program 417 MW (less than significant with mitigation)	However, with fewer turbines proposed for installation, fewer roads, supporting electrical infrastructure, reduced operations and maintenance practices will be required. In addition, firebreaks are no longer needed with new-generation turbines (see Section 2.4.4), and this will result in a reduction in herbicide spraying and no ground-disturbing tilling This reduction in disturbed area and ongoing operational access results in a reduced impact to sensitive species than with the current operational requirements.	Comment provided on 3/17. Draft PEIR failed to respond to comment, Bio 3 (vernal pool branchiopods), Bio 4 (elderberry longhorn beetle), Bio 5 (special status amphibians), Bio 7 (reptiles), Bio 10 (kit fox and badger) relate to how operations will affect existing species. The analyses do not take into account that using a smaller footprint for repowered windfarms is likely to require a smaller footprint of maintenance, firebreaks, pesticides, etc which will have a smaller effect on the existing species than the existing turbines. Please add suggested language to each section.	30
31.		3.4-69	**Mitigation Measure BIO-4b: Compensate for direct and indirect effects on** If elderberry shrubs cannot be avoided and protected as outlined in Mitigation Measure 4a, the project proponent will obtain an incidental take permit from USFWS and compensate for the loss of any elderberry shrubs. Surveys of elderberry shrubs to be transplanted will be conducted by a qualified biologist prior to transplantation. Surveys will be conducted in accordance with the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (U.S. Fish and Wildlife Service 1999). Survey results and an analysis of the number of elderberry seedlings/cuttings and associated native plants based on the survey results will be submitted to USFWS in a biological assessment or an HCP. After	**Mitigation Measure BIO-4b: Compensate for direct and indirect effects on valley elderberry longhorn beetle** If activities conducted as part of Mitigation Measure 4a determine that the project will impact the elderberry longhorn beetle, the project proponent will obtain authorization from the appropriate permitting authority (e.g., USFWS Biological Opinion) to compensate for the loss of any valley elderberry longhorn beetle. The project proponent will compensate for direct and permanent effects on the valley elderberry longhorn beetle as required by the applicable USFWS authorization. ~~If elderberry shrubs cannot be avoided and protected as outlined in Mitigation Measure 4a, the project proponent will obtain an incidental take permit a from USFWS and compensate for the~~	Comment provided on 3/17. Draft PEIR failed to respond to comment. Global edit: USFWS approval for take of a listed species is through a Biological Opinion, not an incidental take permit. Please update language throughout PEIR.	31

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			receipt of an incidental take permit and before construction begins, the project proponent will compensate for direct effects on elderberry shrubs by transplanting shrubs that cannot be avoided to a USFWS-approved conservation area. Elderberry seedlings or cuttings and associated native species will also be planted in the conservation area. Each elderberry stem measuring 1 inch or more in diameter at ground level that is adversely affected (i.e., transplanted or destroyed) will be replaced, in the conservation area, with elderberry seedlings or cuttings at a ratio ranging from 1:1 to 8:1 (new plantings to affected stems). The numbers of elderberry seedlings/cuttings and associated riparian native trees/shrubs to be planted as replacement habitat are determined by stem size class of affected elderberry shrubs, presence or absence of exit holes, and whether the shrub lies in a riparian or nonriparian area. Stock of either seedlings or cuttings would be obtained from local sources. At the discretion of USFWS, shrubs that are unlikely to survive transplantation because of poor condition or location, or a plant that would be extremely difficult to move because of access problems, may be exempted from transplantation. In cases where transplantation is not possible, minimization ratios would be increased to offset the additional habitat loss. The relocation of the elderberry shrubs will be conducted according to USFWS-approved procedures outlined in the Conservation	~~loss of any elderberry shrubs elderberry longhorn beetle. Surveys of elderberry shrubs to be transplanted will be conducted by a qualified biologist prior to transplantation. Surveys will be conducted in accordance with the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (U.S. Fish and Wildlife Service 1999). Survey results and an analysis of the number of elderberry seedlings/cuttings and associated native plants based on the survey results will be submitted to USFWS in a biological assessment or an HCP. After receipt of an incidental take permit and before construction begins, the project proponent will compensate for direct effects elderberry shrubs by transplanting shrubs that cannot be avoided to a USFWS-approved conservation area. Elderberry seedlings or cuttings and associated native species will also be planted in the conservation area. Each elderberry stem measuring 1 inch or more in diameter at ground level that is adversely affected (i.e., transplanted or destroyed) will be replaced, in the conservation area, with elderberry seedlings or cuttings at a ratio ranging from 1:1 to 8:1 (new plantings to affected stems). The numbers of elderberry seedlings/cuttings and associated riparian native trees/shrubs to be planted as replacement habitat are determined by stem size class of affected elderberry shrubs, presence or absence of exit holes, and whether the shrub lies in a riparian or nonriparian area. Stock of either seedlings or cuttings~~	

31 cont.

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			Guidelines (U.S. Fish and Wildlife Service 1999). Elderberry shrubs within the project construction area that cannot be avoided will be transplanted during the plant's dormant phase (November through the first 2 weeks of February). A qualified biological monitor will remain onsite while the shrubs are being transplanted. Evidence of valley elderberry longhorn beetle occurrence in the conservation area, the condition of the elderberry shrubs in the conservation area, and the general condition of the conservation area itself will be monitored over a period of 10 consecutive years or for 7 years over a 15-year period from the date of transplanting. The project proponent will be responsible for funding and providing monitoring reports to USFWS in each of the years in which a monitoring report is required. As specified in the Conservation Guidelines, the report will include information on timing and rate of irrigation, growth rates, and survival rates and mortality.	~~would be obtained from local sources.~~		31 cont.
32.	3.4.2	3.4-73	**Mitigation Measure BIO-5a: Implement best management practices to avoid and minimize effects on special-status amphibians** All project proponents will ensure that BMPs and other appropriate measures, in accordance with measures developed for the EACCS, be incorporated into the appropriate design and construction documents. Implementation of some of these measures will require that the project proponent obtain incidental take permits from	**Mitigation Measure BIO-5a: Implement best management practices to avoid and minimize effects on special-status amphibians** All project proponents will ensure that BMPs and other appropriate measures, in accordance with measures developed for the EACCS, be incorporated into the appropriate design and construction documents. Implementation of some of these measures will require that the project proponent obtain incidental	Comment provided on 3/17. Draft PEIR failed to respond to comment. Please cite California SWRCB NPDES construction general requirements for stormwater. As appropriate, please refer reader to section where laws are discussed.	32

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			USFWS (California red-legged frog and California tiger salamander) and from CDFW (California tiger salamander only) before construction begins. Additional conservation measures or conditions of approval may be required in applicable project permits (i.e., ESA incidental take permit). Ground-disturbing activities will be limited to dry weather between April 15 and October 31. No ground-disturbing work will occur during wet weather. Wet weather is defined as when there has been 0.25 inch of rain in a 24-hour period. Ground disturbing activities halted due to wet weather may resume when precipitation ceases and the National Weather Service 72-hour weather forecast indicates a 30% or less chance of precipitation. No ground-disturbing work will occur during a dry-out period of 48 hours after the above referenced wet weather. [……]	take permits from USFWS (California red-legged frog and California tiger salamander) and from CDFW (California tiger salamander only) before construction begins. Additional conservation measures or conditions of approval may be required in applicable project permits (i.e., ESA incidental take permit). Applicant will comply with State of California State Water Resources Control Board NPDES construction general requirements for stormwater. ~~Ground-disturbing activities will be limited to dry weather between April 15 and October 31. No ground-disturbing work will occur during wet weather. Wet weather is defined as when there has been 0.25 inch of rain in a 24-hour period. Ground disturbing activities halted due to wet weather may resume when precipitation ceases and the National Weather Service 72-hour weather forecast indicates a 30% or less chance of precipitation. No ground-disturbing work will occur during a dry-out period of 48 hours after the above referenced wet weather.~~ [……]		32 cont.
33.	3.4.2	3.4-75	The plan will include a requirement to monitor restoration areas annually (between March and May) for up to 3 years following the year of restoration.	The plan will include a requirement to monitor restoration areas annually (between March and ~~May~~ October) for up to 3years, unless there are drought conditions, following the year of restoration.	Since invasive species is a component of the restoration success criteria, the associated monitoring period should occur from early spring (March) to late summer (October) to coincide with the extended growing season for invasive species.	33
34.	3.4.2	3.4-75	Additionally, the project proponent will provide annual monitoring reports to the County by August 1	Additionally, the project proponent will provide annual monitoring reports to the County by ~~August 1~~	This proposed revision is consistent with the revision proposed above.	34

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			of each year, summarizing the monitoring results and any remedial measures implemented (if any are necessary).	~~of each year~~ January 31 following each monitoring year, summarizing the monitoring results and any remedial measures implemented (if any are necessary).		34 cont.
35.	3.4.2	3.4-86	Remove suitable nesting habitat (shrubs and trees) during the non-breeding season (September 1–January 31) for nesting birds.	To the extent feasible, ~~R~~remove onsite suitable nesting habitat (shrubs and trees) during the non-breeding season (September 1–January 31) for nesting birds.	Revised because landowner and/or resource agency work window restrictions may preclude implementation of this preventative measure.	35
36.	3.4.2	3.4-134	**Mitigation Measure BIO-15: Compensate for the loss of alkali meadow habitat** If alkali meadow habitat is filled or disturbed as part of a repowering project, the project proponent will compensate for the loss of this habitat to ensure no net loss of habitat functions and values. Compensation ratios will be based on site-specific information and determined through coordination with state and federal agencies (CDFW, USFWS, USACE). The compensation will be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of onsite restoration/creation, offsite restoration, and mitigation credits. A restoration and monitoring plan will be developed and implemented. The plan will describe how alkali meadow habitat will be created and monitored.	**Mitigation Measure BIO-15: Compensate for the loss of alkali meadow habitat** If alkali meadow habitat is filled or disturbed as part of a repowering project, the project proponent will compensate for the loss of this habitat to ensure no net loss of habitat functions and values. Compensation ratios will be based on site-specific information and determined through permit conditions ~~coordination~~ with state and federal agencies (CDFW, USFWS, USACE). ~~The compensation will be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of onsite restoration/creation, offsite restoration, and mitigation credits. A restoration and monitoring plan will be developed and implemented. The plan will describe how alkali meadow habitat will be created and monitored.~~	Comment provided on 3/17. Draft PEIR failed to respond to comment. See suggested revision. Please apply changes to BIO-16 and BIO-18, Suggest stating in text that ECAP is incorporated by reference.	36
37.	3.4.2	3.4-137	**Impact BIO-17b: Potential for ground-disturbing activities to result in direct adverse effects on common habitats—Golden Hills Project (less than significant)** [….] At each reclamation site, the topography would be graded to	**Impact BIO-17b: Potential for ground-disturbing activities to result in direct adverse effects on common habitats—Golden Hills Project (less than significant)** [….] At each reclamation site, the topography would be ~~graded to~~	Comment provided on 3/17. Draft PEIR failed to respond to comment. Global edit: Unless specified by County ordinance or permit requirements, language on contouring to pre-existing conditions in PEIR	37

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			match the contours of the natural surrounding landscape, stabilized, reseeded with an appropriate seed mixture, and allowed to become revegetated without assistance. Reclamation activities would be guided by a reclamation plan developed in coordination with the County and other applicable agencies. This impact would be less than significant. No mitigation is required.	~~match the contours of the natural surrounding landscape~~, stabilized, reseeded with an appropriate seed mixture, and allowed to become revegetated without assistance. Reclamation activities would be guided by a reclamation plan developed in coordination with the County and other applicable agencies. This impact would be less than significant. No mitigation is required.	should be removed since it could result in greater impacts.	37 cont.
Cultural Resources						
38.		3.5-17	**Impact CUL-1b: Cause a substantial adverse change in the significance of a historic resource—Golden Hills Project (less than significant with mitigation)** The Golden Hills Project may cause a substantial adverse change in the significance of a historical resource—Dam #3 (P01-010958). This resource is the remains of an earthen dam that measured 30 feet long, 12 feet wide, and 10 feet high. Per the 1999 recordation, the associated pond, located behind it, had dried up. No other features are recorded or were observed during the Google Earth remote reconnaissance survey by the architectural historian in June 2013.		Where is this resource located? Please confirm that P01-010958 is located within the Golden Hills boundary. This resource was not provided by NWIC in search of resources within 1 mile of the project boundary. This resource is also not discussed elsewhere in section.	38
Greenhouse Gases						
39.	3.7.1, Table 3.7-1	3.7-9			The greenhouse gas column lists units (ppm/ppt/ppb) which actually only apply to the 2005 atmospheric abundance (last column), and not the GWP (which is a comparative factor) or lifetime columns. Suggest clarifying	39

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					column headers and moving units in question to the last column so as not to mislead the reader.	39 cont.
40.	3.7.2	3.7-17			Comment provided on 3/17. Draft PEIR failed to respond to comment. Do the calculations for concrete sinks account for the reduction in concrete associated with removing the old turbines/infrastructure that is no longer needed? Please confirm calculations and how they relate to the concrete that will be removed for decommissioning.	40
Noise						
41.	3.11.1	3.11-1	In general, human sound perception is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level.	In general, human sound perception is such that a change in sound level of 1 dBA cannot typically be perceived by the human ear, a change of 3 dBA is barely noticeable, a change of 5 dBA is clearly noticeable, and a change of 10 dBA is perceived as doubling or halving the sound level when comparing similar sounds (i.e., traffic to traffic).	The increased attenuation is typically in the range of 1 to 2 dBA per doubling of distance. Add underlined section and clarify that most of the discussion in this section is applicable to dBA.	41
42.	3.11.1	3.11-3	The International Standard IEC 61400-11 for wind turbine noise assessment provides a requirement for evaluating tonality.	The International Standard IEC 61400-11 for wind turbine noise assessment provides a requirement for evaluating tonality at the IEC test location which is close to the turbine. Far field tonality at typical residential distances may be evaluated using a variety of methods, however, if a tone is not present at the IEC test location it should not materialize at the resident.	See suggested edit.	42
43.		3.11-4	Wind turbines produce a broadband sound (i.e., the sound occurs over a wide range of frequencies,	Wind turbines produce a broadband sound (i.e., the sound occurs over a wide range of	See suggested edit.	43

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			including low frequencies). Low-frequency sounds are in the range of 20–100 Hz, and infrasonic sound (or *infrasound*) is low-frequency sound of less than 20 hertz. Compared with higher frequency sound, low-frequency sound propagates over longer distances, is transmitted through buildings more readily, and can excite structural vibrations (e.g., rattling windows or doors). The threshold of perception, in decibels, also increases as the frequency decreases. For example, in the frequency range where humans hear best (in the low kilohertz), the threshold of hearing is at about 0 dB, but at a frequency of only 10 Hz, the threshold of hearing is at about 100 dB (Rogers et al. 2006a). Older wind turbines—particularly those in which the blades were on the downwind side of the tower—produced more low-frequency sound because their towers blocked wind flow, causing the blades to pass through more turbulent air. Modern, upwind turbines produce a broadband sound that includes low-frequency sounds, but not at significant levels. A primary cause for low-frequency sounds in modern turbines is the blade passing through the change in air flow at the front of the tower, and this can be aggravated by unusually turbulent wind conditions. This effect is generally referred to as blade amplitude modulation because the aerodynamic noise generated by the blades (the "swishing" sound) is modulated as the turbine blades pass through uneven air velocities. The uneven	frequencies, including low and high frequencies). Low-frequency sounds are in the range of 20–100 Hz, and infrasonic sound (or *infrasound*) is low-frequency sound of less than 20 hertz. Compared with higher frequency sound, low-frequency sound propagates over longer distances, is transmitted through buildings more readily, and at very high levels can excite structural vibrations (e.g., rattling windows or doors). Older wind turbines—particularly those in which the blades were on the downwind side of the tower—produced more low-frequency sound because their towers blocked wind flow, causing the blades to pass through more turbulent air. Modern, upwind turbines produce a broadband sound that includes low-frequency sounds, but not at significant levels. A primary cause for low-frequency sounds in modern turbines is the blade passing through ~~the change in air flow at the front of the tower, and this can be aggravated by~~ unusually turbulent wind conditions. ~~This effect is generally referred to as blade amplitude modulation because the aerodynamic noise generated by the blades (the "swishing" sound) is modulated as the turbine blades pass through uneven air velocities.~~ The uneven air that causes this effect may be due to interaction of other turbines, excessive wind shear, or topography (Bowdler 2008). These factors may also contribute to		43 cont.

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			air that causes this effect may be due to interaction of other turbines, excessive wind shear, or topography (Bowdler 2008).	periodic increases in the prominence of blade swish or amplitude modulation.		43 cont.
44.	3.11.1	3.11-2	Table 3.11-1: C-Weighted Decibel (dBC) -- The sound pressure level in decibels as measured using the Cweighting filter network. The C-weighting is very close to an unweighted or "flat" response. C-weighting is only used in special cases when low-frequency noise is of particular importance. A comparison of measured A and C weighted level gives an indication of low frequency content.	~~C-Weighted Decibel (dBC) -- The sound pressure level in decibels as measured using the Cweighting filter network. The C-weighting is very close to an unweighted or "flat" response. C-weighting is only used in special cases when low-frequency noise is of particular importance. A comparison of measured A and C weighted level gives an indication of low frequency content.~~	The entire discussion of dBC levels and C-weighted noise analysis (including Table 3.11-6 and the definition of C-weighted decibel in Table 3.11-1) should be removed, as there is no applicable County requirement stated in dBC and the analysis is misleading and flawed. A recent guidance document funded by the U.S. Department of Energy for the National Association of Regulatory Utility Commissioners specifically addresses the applicability of the dBC metric for wind energy facilities [Assessing Sound Emissions from Proposed Wind Farms & Measuring the Performance of Completed Projects, October 2011]. This document concludes "Despite their occasional appearance in local ordinances as an intended way to limiting the low frequency noise emissions from wind projects, by either an absolute limit or a dBC-dBA differential, C-weighted sound levels have no practical place in the measurement of wind turbine sound."	44
45.	3.11.1	3.11-7	The County Zoning Ordinance (County General Code, Chapter 17) restricts noise from commercial activities by prohibiting any use that would generate a noise or vibration that is discernible without instruments beyond the property line. This performance standard does not apply to transportation activities or temporary construction work.	~~The County Zoning Ordinance (County General Code, Chapter 17) restricts noise from commercial activities by prohibiting any use that would generate a noise or vibration that is discernible without instruments beyond the property line. This performance standard does not apply to transportation activities or temporary construction work.~~	This standard is not applicable to any Project lands. It is only applicable in industrial districts (M-P, M-1 and M-2). See County Code §17.42.020, 17.44.100 & 17.46.080.	45

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46.		3.11-7	Conditional Use Permits The County's CUPs for the continued operation of the windfarms after 2005, regulated by Resolution Number R-2005-463, identified the following specific condition regarding noise levels. Noise Standards: Wind turbines shall be operated so as to not exceed the County's noise standard of 55 dBA (Ldn) or 70 dBC (Ldn) as measured in both cases at the exterior of any dwelling unit. If the dwelling unit is on land under lease from the Permittee, the applicable standard shall be 65 dBA (Ldn) and 70 dBC (Ldn). The Resolution approving the CUPs for windfarm operations included a finding that as a land use, the wind energy use "is properly related to other land uses and transportation and service facilities in the vicinity, in that… d) Although some residents may object to the visual, noise, or other effects of the turbines, the County has determined that the wind energy projects are in compliance with the conditions of approval and are an acceptable use in the area."	~~Conditional Use Permits~~ ~~The County's CUPs for the continued operation of the windfarms after 2005, regulated by Resolution Number R-2005-463, identified the following specific condition regarding noise levels.~~ ~~Noise Standards: Wind turbines shall be operated so as to not exceed the County's noise standard of 55 dBA (Ldn) or 70 dBC (Ldn) as measured in both cases at the exterior of any dwelling unit. If the dwelling unit is on land under lease from the Permittee, the applicable standard shall be 65 dBA (Ldn) and 70 dBC (Ldn).~~ ~~The Resolution approving the CUPs for windfarm operations included a finding that as a land use, the wind energy use "is properly related to other land uses and transportation and service facilities in the vicinity, in that… d) Although some residents may object to the visual, noise, or other effects of the turbines, the County has determined that the wind energy projects are in compliance with the conditions of approval and are an acceptable use in the area."~~	Discussion of a prior CUP condition of approval in this section is inappropriate. It is not a regulatory requirement or County standard; it is a condition of approval for a prior project-specific CUP—i.e., it will not apply to the Project and has no ongoing relevance or authority. The entire discussion of dBC levels and c-weighted noise analysis (including Table 3.11-6 and the definition of C-weighted decibel in Table 3.11-1) should be removed, as there is no applicable County requirement stated in dBC and the analysis is misleading and flawed.	46
47.	3.11.2	3.11-10	C-weighted sound levels for the REpower MM 92 turbine and the Vestas V90 are about 10 dB higher than A-weighted sound levels. The C-weighted county standard for wind turbines is 70 dBC (L_{dn}). Table 3.11-6 provides an indication of potential received noise levels expressed in dBC (Ldn) based	~~C-weighted sound levels for the REpower MM 92 turbine and the Vestas V90 are about 10 dB higher than A-weighted sound levels. The C-weighted county standard for wind turbines is 70 dBC (L_{dn}).~~ ~~Table 3.11-6 provides an indication of potential received noise levels expressed in dBC (Ldn) based~~	The entire discussion of dBC levels and c-weighted noise analysis (including Table 3.11-6 and the definition of C-weighted decibel in Table 3.11-1) should be removed, as there is no applicable County requirement stated in dBC and the analysis is misleading and flawed.	47

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			on the distance to a receiver and the number of turbines influencing noise received at the receptor. The table also highlights distances within which the County standard of 70 dBC (Ldn) would be exceeded. Under the assumption that up to 10 turbines could affect the received noise level at a receptor, the results in Table 3.11-6 indicate that the County noise standard of 70 dBC(Ldn) could be exceeded within about 1,000 feet of a receptor.	~~on the distance to a receiver and the number of turbines influencing noise received at the receptor. The table also highlights distances within which the County standard of 70 dBC (Ldn) would be exceeded. Under the assumption that up to 10 turbines could affect the received noise level at a receptor, the results in Table 3.11-6 indicate that the County noise standard of 70 dBC(Ldn) could be exceeded within about 1,000 feet of a receptor.~~		47 cont.
48.	3.11.2	3.11-11	The County uses a noise standard for wind turbines in the program area of 55 dBA (Ldn) or 70 dBC (Ldn) at dwelling units, with the exception that dwelling units on the same parcel being leased for windfarm use may be exposed to up to 65 dBA (Ldn). Noise impacts associated with the proposed program are evaluated based on how the project would change the daily noise level associated with wind turbine operations. The threshold of 5 dB is used because it is generally considered to be the lowest sound level change clearly noticeable by the human ear.	The County uses a noise standard for wind turbines in the program area of 55 dBA (Ldn) ~~or 70 dBC (Ldn) at dwelling units~~, with the exception that dwelling units on the same parcel being leased for windfarm use may be exposed to up to 65 dBA (Ldn). Noise impacts associated with the proposed program are evaluated based on how the project would change the daily noise level associated with wind turbine operations. The threshold of 5 dB is used because it is generally considered to be the lowest sound level change clearly noticeable by the human ear.	This is incorrect. The County has no noise standards stated in dBC. The entire discussion of dBC levels and c-weighted noise analysis (including Table 3.11-6 and the definition of C-weighted decibel in Table 3.11-1) should be removed, as there is no applicable County requirement stated in dBC and the analysis is misleading and flawed.	48
49.	3.11.2	3.11-11	Exposure of residences to noise from new wind turbines in excess of 70 dBC (Ldn) where wind turbine noise is currently less than 70 dBC (Ldn).	~~Exposure of residences to noise from new wind turbines in excess of 70 dBC (Ldn) where wind turbine noise is currently less than 70 dBC (Ldn).~~	There is no basis for this being a standard for significance as there is no applicable noise requirement stated in dBC. The entire discussion of dBC levels and c-weighted noise analysis (including Table 3.11-6 and the definition of C-weighted decibel in Table 3.11-1) should be removed, as there is no applicable County requirement stated in dBC and the analysis is misleading and flawed.	49

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50.	3.11.2	3.11-12	The noise prediction results in Table 3.11-5, however, indicate that residences located within about 1,500 feet of a group of turbines could be exposed to noise that exceeds 55 dBA (Ldn). The noise prediction results in Table 3.11-6 also indicates that residences located within about 800 feet of a group of turbines could be exposed to noise that exceeds 70 dBC (Ldn). Because of the possibility that implementation of program Alternative 1 could result in daily Ldn values caused by wind turbines to increase by more than 5 dB at locations where noise currently exceeds 55 dBA (Ldn), expose residences to noise in excess of 55 dBA (Ldn) where noise is currently less than 55 dBA (Ldn), or expose residence to noise in excess of 70 dBC (Ldn) this impact is considered to be significant. Implementation of Mitigation Measure NOI-1 would reduce this impact to a less-than-significant level.	The noise prediction results in Table 3.11-5, however, indicate that residences located within about 1,500 feet of a group of turbines could be exposed to noise that exceeds 55 dBA (Ldn). ~~The noise prediction results in Table 3.11-6 also indicates that residences located within about 800 feet of a group of turbines could be exposed to noise that exceeds 70 dBC (Ldn).~~ Because of the possibility that implementation of program Alternative 1 could result in daily Ldn values caused by wind turbines to increase by more than 5 dB at locations where noise currently exceeds 55 dBA (Ldn), expose residences to noise in excess of 55 dBA (Ldn) where noise is currently less than 55 dBA (Ldn), ~~or expose residence to noise in excess of 70 dBC (Ldn)~~ this impact is considered to be significant. Implementation of Mitigation Measure NOI-1 would reduce this impact to a less-than-significant level.	The entire discussion of dBC levels and c-weighted noise analysis (including Table 3.11-6 and the definition of C-weighted decibel in Table 3.11-1) should be removed, as there is no applicable County requirement stated in dBC and the analysis is misleading and flawed.	50
51.	3.11.2	3.11-12	**Mitigation Measure NOI-1: Perform project-specific noise studies and implement measures to comply with County noise standards** The applicant for any proposed repowering project will retain a qualified acoustic consultant to prepare a report that evaluates noise impacts associated with operation of the proposed wind turbines. This evaluation will include a noise monitoring survey to quantify existing noise conditions at noise sensitive receptors located within 2,000 feet of any proposed turbine location. This survey will	**Mitigation Measure NOI-1: Perform project-specific noise studies and implement measures to comply with County noise standards** The applicant for any proposed repowering project will retain a qualified acoustic consultant to prepare a report that evaluates noise impacts associated with operation of the proposed wind turbines. This evaluation will include a noise monitoring survey to quantify existing noise conditions at noise sensitive receptors located within 2,000 feet of any proposed turbine location. This survey will	There is no basis to include a C-weighted measure in any mitigation, as there are no applicable standards measured by dBC. The entire discussion of dBC levels and c-weighted noise analysis (including Table 3.11-6 and the definition of C-weighted decibel in Table 3.11-1) should be removed, as there is no applicable County requirement stated in dBC and the analysis is misleading and flawed.	51

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			include measurement of the daily A-weighted and C-weighed Ldn values over a 1-week period and concurrent logging of wind speeds at the nearest meteorological station. The study will include a site-specific evaluation of predicted operational noise levels at nearby noise sensitive uses. If operation of the project is predicted to result in noise in excess of 55 dBA (Ldn) where noise is currently less than 55 dBA (Ldn), result in a 5 dB increase where noise is currently greater than 55 dBA(Ldn), or result in noise that exceeds 70 dBC (Ldn), the applicant will modify the project, including selecting new specific installation sites within the program area, to ensure that these performance standards will not be exceeded. Methods that can be used to ensure compliance with these performance standards include increasing the distance between proposed turbines and noise sensitive uses and the use of alternative turbine operational modes to reduce noise. Upon completion of the evaluation, the project applicant will submit a report to the County demonstrating how the project will comply with these performance standards. After review and approval of the report by County staff, the applicant will incorporate measures as necessary into the project to ensure compliance with these performance standards.	include measurement of the daily A-weighted ~~and C-weighed Ldn values~~ over a 1-week period and concurrent logging of wind speeds at the nearest meteorological station. The study will include a site-specific evaluation of predicted operational noise levels at nearby noise sensitive uses. If operation of the project is predicted to result in noise in excess of 55 dBA (Ldn)~~,~~ or result in a 5 dB increase where noise is currently greater than 55 dBA(Ldn)~~, or result in noise that exceeds 70 dBC (Ldn),~~ the applicant will modify the project~~, including selecting new specific installation sites within the program area,~~ to ensure that these performance standards will not be exceeded. Methods that can be used to ensure compliance with these performance standards include but are not limited to increasing the distance between proposed turbines and noise sensitive uses and the use of alternative turbine operational modes to reduce noise, or selecting new specific installation sites within the program area. Upon completion of the evaluation, the project applicant will submit a report to the County demonstrating how the project will comply with these performance standards. After review and approval of the report by County staff, the applicant will incorporate measures as necessary into the project to ensure compliance with these performance standards.		51 cont.
52.	3.11.2	3.11-13	The noise prediction results in Table 3.11-5, however, indicate that residences located within about	The noise prediction results in Table 3.11-5, however, indicate that residences located within	The entire discussion of dBC levels and c-weighted noise analysis (including Table 3.11-6 and the	52

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			1,500 feet of a group of turbines could be exposed to noise that exceeds 55 dBA (Ldn). The noise prediction results in Table 3.11-6 also indicates that residences located within about 800 feet of a group of turbines could be exposed to noise that exceeds 70 dBC (Ldn). Because of the possibility that implementation of program Alternative 2 could result in daily Ldn values caused by wind turbines to increase by more than 5 dB at locations where noise currently exceeds 55 dBA (Ldn), expose residences to noise in excess of 55 dBA (Ldn) where noise is currently less than 55 dBA (Ldn), or expose residence to noise in excess of 70 dBC (Ldn) this impact is considered to be significant. Implementation of Mitigation Measure NOI-1 would reduce this impact to a less-than-significant level.	about 1,500 feet of a group of turbines could be exposed to noise that exceeds 55 dBA (Ldn). ~~The noise prediction results in Table 3.11-6 also indicates that residences located within about 800 feet of a group of turbines could be exposed to noise that exceeds 70 dBC (Ldn).~~ Because of the possibility that implementation of program Alternative 2 could result in daily Ldn values caused by wind turbines to increase by more than 5 dB at locations where noise currently exceeds 55 dBA (Ldn)~~,~~ or expose residences to noise in excess of 55 dBA (Ldn) where noise is currently less than 55 dBA (Ldn), ~~or expose residence to noise in excess of 70 dBC (Ldn)~~ this impact is considered to be significant. Implementation of Mitigation Measure NOI-1 would reduce this impact to a less-than-significant level.	definition of C-weighted decibel in Table 3.11-1) should be removed, as there is no applicable County requirement stated in dBC and the analysis is misleading and flawed.	52 cont.
53.	3.11.2	3.11-14	The noise prediction results in Table 3.11-5 however, indicate that residences located within about 1,500 feet of a group of turbines could be exposed to noise that exceeds 55 dBA (Ldn) or increases in noise greater than 5 dB. The noise prediction results in Table 3.11-6 also indicate that residences located within about 800 feet of a group of turbines could be exposed to noise that exceeds 70 dBC (Ldn). No new turbines are anticipated to be located within 1,000 feet of existing residences. Because of the possibility that daily Ldn value caused by wind turbines could increase by more than 5 dB at locations where noise currently exceeds 55 dBA (Ldn), expose	The noise prediction results in Table 3.11-5 however, indicate that residences located within about 1,500 feet of a group of turbines could be exposed to noise that exceeds 55 dBA (Ldn) or increases in noise greater than 5 dB. ~~The noise prediction results in Table 3.11□6 also indicate that residences located within about 800 feet of a group of turbines could be exposed to noise that exceeds 70 dBC (Ldn).~~ No new turbines are anticipated to be located within 1,000 feet of existing residences. Because of the possibility that daily Ldn value caused by wind turbines could increase by more than 5 dB at locations where noise currently	The entire discussion of dBC levels and c-weighted noise analysis (including Table 3.11-6 and the definition of C-weighted decibel in Table 3.11-1) should be removed, as there is no applicable County requirement stated in dBC and the analysis is misleading and flawed.	53

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			residences to noise in excess of 55 dBA (Ldn) where noise is currently less than 55 dBA (Ldn), or expose residences to noise in excess of 70 dBC (Ldn) this impact is considered to be significant. Implementation of Mitigation Measure NOI-1, as discussed under Impact NOI-1a, would reduce this impact to a less-than-significant level.	exceeds 55 dBA (Ldn)~~,~~ or expose residences to noise in excess of 55 dBA (Ldn) where noise is currently less than 55 dBA (Ldn)~~, or expose residences to noise in excess of 70 dBC (Ldn)~~ this impact is considered to be significant. Implementation of Mitigation Measure NOI-1, as discussed under Impact NOI-1a, would reduce this impact to a less-than-significant level.		53 cont.
54.	3.11.2	3.11-14	The noise prediction results in Table 3.11-5 indicate that residences located within about 1,750 feet of a group of turbines could be exposed to noise that exceeds 55 dBA (Ldn) or increases in noise greater than 5 dB. The noise prediction results in Table 3.11-6 also indicate that residences located within about 1,000 feet of a group of turbines could be exposed to noise that exceeds 70 dBC (Ldn). Because the nearest residence would be more than 3,000 feet from the new turbines, operation of the new turbines is not expected to result in noise that exceeds 55 dBA(Ldn), 70 dBC(Ldn) or result in a 5 dBA increase in noise at residences. The operational noise impact is considered to be less than significant. No mitigation is required.	The noise prediction results in Table 3.11-5 indicate that residences located within about 1,750 feet of a group of turbines could be exposed to noise that exceeds 55 dBA (Ldn) or increases in noise greater than 5 dB. ~~The noise prediction results in Table 3.11-6 also indicate that residences located within about 1,000 feet of a group of turbines could be exposed to noise that exceeds 70 dBC (Ldn).~~ Because the nearest residence would be more than 3,000 feet from the new turbines, operation of the new turbines is not expected to result in noise that exceeds 55 dBA(Ldn)~~, 70 dBC(Ldn)~~ or result in a 5 dBA increase in noise at residences. The operational noise impact is considered to be less than significant. No mitigation is required.	The entire discussion of dBC levels and c-weighted noise analysis (including Table 3.11-6 and the definition of C-weighted decibel in Table 3.11-1) should be removed, as there is no applicable County requirement stated in dBC and the analysis is misleading and flawed.	54
Alternatives						
55.	4.2.2 No Repowering – Reauthorization of Existing CUPs	4-25 and 4-26	The No Repowering—Reauthorization of Existing CUPs Alternative would not generate any short-term construction-related GHG emissions. The annual GHG emissions reduction of approximately 97,000 metric tons of CO2e associated with the proposed		Comment provided on 3/17. Draft PEIR failed to respond to comment. If existing turbines were to keep operating, then there would be a savings in GHG emissions relative to full decommissioning.	55

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			Repowering Program would not occur under this alternative. This alternative would have no impact on GHG emissions.			55 cont.
56.	4.2.2 No Repowering – Reauthorization of Existing CUPs	4-25 and 4-26	Because the No Repowering—Reauthorization of Existing CUPs Alternative would entail no new construction activities, construction workers would not be exposed to potentially hazardous materials associated with construction materials, ground disturbance, or decommissioning older turbines. Operational impacts associated with hazards and hazardous materials would be similar to those under the proposed Repowering Program, with the exception of potential blade throw hazards. The potential blade throw hazard would be less, because the existing blade throw hazard distance is less than under the Repowering Program. Consequently, impacts related to hazards and hazardous materials under this alternative would be less than under the proposed Repowering Program.		Comment provided on 3/17. Draft PEIR failed to respond to comment. No Repowering- Reauthorization of Existing CUPs should have a larger impact on blade throw than the proposed project. Please revisit analysis.	56

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Summary

The following document provides initial facility descriptions. Final engineering and design will be completed after the project is contracted.

Project Description

NextEra proposes an energy storage unit that will be sited within a one acre plot of land co-located with the proposed project's substation. The modular design will include individual lithium-ion batteries contained in either a newly constructed building that combines racks of batteries into partitioned sectors or in approximately thirty 40-foot International Standard Organization containers, depending on manufacturer specifications and weight limitations. With this type of modular design, the total storage capacity is a function of the quantity and size (MW) of each individual battery and the configuration of the unit's inverters and transformers.

Specifically, the configuration consists of building or standard ISO container sited battery module and management systems, connected to bi-directional inverters and pad-mount transformers which connect via a step up transformer to the grid-connection point. This allows the batteries to charge and discharge into the transmission system. The system will contain all of the necessary energy management software to maintain the health of the system, protection and monitoring capabilities and software to allow the scheduling coordinator to control charge and discharge of the batteries. The systems will be equipped with fire protection systems as necessary.

Initial site construction would include any site grading, ground grid installation and road construction required to access the site. All earth moving activities for the battery storage system will be within an area already expected to be disturbed by construction of the substation. Either a poured slab (for a building) or drilled pier foundations would be installed to support the Battery Energy Storage System containers. These containers are delivered to the site on flat bed trailers. The containers are reconstructed with the required racks, cables, battery management and SCADA hardware, fire detection and suppression, and air conditioning. Inverter skids and pad mount transformers will be installed on slab foundations as well. Each container, inverter in pad mount will be connected together via cable and fiber routed in tray or trenched. The batteries will be shipped separately from the containers in dedicated shipping containers. Construction is expected to take approximately 4 months.

Annually during the operation life of the project, battery additions will be required to supplement the initial installation.

Because of the volume of lithium-ion batteries used for the energy storage unit, the batteries are listed as "Hazardous Chemicals" for purposes of reporting in the Emergency Planning and Community Right to Know Act Tier II or the California Hazardous Materials Business Plan.

Waste batteries will be removed from the site and returned to the manufacturer or an approved battery reprocessor for recycling or disposal.

GP-4—Golden Hills, LLC

Subject: FW: Golden Hills: Comments on Draft PEIR

Attachments: NextEra Comment re bats and repowering RC.docx; NextEra Comment Regarding Golden Eagles and RepoweringRCJuly2014.docx

From: Pappalardo, Mike [mailto:MIKE.PAPPALARDO@nexteraenergy.com]
Sent: Monday, July 21, 2014 6:06 PM
To: Sandra.Rivera@acgov.org; Brungardt, Chris
Cc: Zeff, Sally; andrew.young@acgov.org; HART, DARYL; goldenhills.stewart@outlook.com; zack@SSLLAWFIRM.COM; Christine.Roberts@CH2M.com; Jessica.Golman@ch2m.com; Aarty.Joshi@CH2M.com; Culver, Renee
Subject: Golden Hills: Comments on Draft PEIR

Sandi:

In addition to the comments that were provided earlier by CH, we also wanted to supplement the record with the attached update on Golden eagles and bats. This information is a summary of the most recent data on Golden eagle and bat mortality that will be provided in more detail within the Vasco Winds second year monitoring report. We anticipate that the full report will be available sometime in late August.

Please feel free to contact me if you have any questions.

Mike Pappalardo | Environmental Manager
NextEra Energy Resources | 3368 Videra Drive | Eugene, OR 97405
office: 541.302.1345 | cell: 541.206.1005 | email: mike.pappalardo@nexteraenergy.com

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1

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NextEra Comment Regarding Golden Eagles and Repowering

Golden eagles are year round residents of the Altamont Pass Wind Resource Area (APWRA) and historical studies have demonstrated that wind turbines have posed a risk to the individuals in the area. With the development of the Programmatic EIR, NextEra Energy Resources wishes to ensure that all available data is available for the evaluation of potential impact to the species, as relates to repowering. For that reason, NextEra has compiled a more up-to-date summary of mortality data with regard to repowered wind projects (Diablo Winds, Buena Vista and Vasco Winds) which includes unpublished estimates from mortality monitoring at the Vasco Winds repowering project. These repowered projects' estimates suggest that repowering of the APWRA could substantially reduce golden eagle fatalities. 57

Vasco Winds Monitoring Program Update

At the completion of the second year of mortality monitoring at all 34 the turbines at the Vasco Winds repowering project, four golden eagle carcasses had been found in total (Table 1). In year one a golden eagle was found at a turbine before official monitoring began at a 28 day search interval turbine. In year two three eagles were found, two at 28 day search interval turbines (incidentally found on plot) and one at a 7 day search interval turbine. As of the date of submission of this document, and into the third year of monitoring at Vasco Winds, a fifth eagle fatality had been discovered.

Table 1. Avian and bat fatalities found during the first two monitoring years, 21 May 2012 through 18 May 2014, at the Vasco Winds Area (total number found)

Species	Monitoring Year	28 day search interval	7 day search interval	Total, including incidentals
Golden eagle [c]	Year 1	1 (1)	0 (0)	1 (1)
Golden eagle	Year 2	2 [#] (2) [#]	1 (1)	3 [#] (3) [#]

[c] Golden eagle was found in February 2012, prior to fatality monitoring.
[#] Found on plot incidentally to routine searches, but included in adjusted fatality estimates.
*Note: A fifth golden eagle incident has been recorded in the first quarter of year three monitoring at the Vasco Winds project.

Repowering Comparisons

To date all three repowered projects (Diablo Winds, Buena Vista and Vasco Winds) have reported lower than APWRA wide average golden eagle mortality rates (Table 2). The following shows the average fatality rates, per MW, per year for repowered sites in the Altamont as well as for the APWRA-wide monitoring program. The APWRA-wide monitoring program, however, incorporates the lower rates for repowered areas in the "APWRA-wide" estimates, artificially reducing mortality rates that would be expected in areas where repowering has not yet occurred (or your baseline condition).

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Table 2. Average estimated fatality rates for golden eagles for APWRA repowering projects and old generation APWRA-wide monitoring program	
	Estimated GOEA fatalities per MW/YR
Vasco Winds 2012-2014 (program ongoing)	0.03
Diablo Winds 2005-2009	0.01
Buena Vista 2007-2009	0.04
APWRA-wide monitoring Program 2005-2012	0.08

* Note: average values for estimates may not be directly comparable due to differences in monitoring programs and timelines under which data was collected.
* Note: values do not include indication of standard error or confidence intervals.
*APWRA-wide monitoring program data would include a calculated rate and expansion to MW capacity for all repowered sites as they come online. This dilutes the estimate if comparing old generation turbines to new is a goal.

57 cont.

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21 July 2014

NextEra Comment Regarding Bats and Repowering

58

In the Altamont Pass Wind Resource Area, although there is a long record of monitoring, there is not a large base of information with regard to bats and risk to bats due to wind turbines. Several different resident and migratory bat species can be found in the general area, but it is unclear what impact repowered turbines will have on bats; it is difficult to develop accurate fatality estimates for individual bat species.

Below is an update as to the number of fatalities that were found during the second year of monitoring at the Vasco Winds project. It should be noted that unadjusted numbers can be very different than adjusted estimates. This is due to corrections that are made for bats that are scavenged and bats that are missed during monitoring activities.

Unadjusted number of bat fatalities found during Vasco Winds monitoring	
	Number of bat fatalities (unadjusted)
Year 1	18
Year 2	17

In order to adjust raw numbers of bat fatalities found at Vasco Winds, trial carcasses are placed to try to measure site specific simultaneous measurements of searcher detection rates and carcass persistence rates. Additionally, a measure of overall detectability is calculated for most species, but with bats it was not possible because no trial bats were found during monitoring trials. In place of that value, the product of the carcass persistence rates and the searcher detection rate were used. Adjustments for search radius and tower height are then made. Estimates of bat fatalities are currently in process for the year two for the Vasco Winds project.

E.6.4 Comment Letter GP-4—Golden Hills, LLC

Response to Comment GP-4-1

The applicant considered changing its project application, but this has not been done. No change to the PEIR is required.

Response to Comment GP-4-2

The text in the first paragraph of Section 2.2.1, *Overview*, on page 2-1 of the Draft PEIR has been revised as shown below.

> Windfarm uses are conditionally permitted in the "A" (Agriculture) zone district, which encompasses the entire program area. Windfarm uses have been permitted in the APWRA since the early 1980s with such CUPs, and the terms of the currently active CUPs (last approved in 2005 for continued operation of the windfarms, and amended in 2007) are in effect ~~set to expire in~~through September 2018. ~~Those CUPs mandated that the windfarm operators would repower their windfarms by that expiration date.~~

Response to Comment GP-4-3

The text in the second paragraph of *Turbine Types* on pages 2-3 and 2-4 of the Draft PEIR has been revised as shown below.

> Empirical evidence (ICF Jones & Stokes 2009; Smallwood and Karas 2009) suggests that windfarms utilizing third- and fourth-generation turbines may have significantly less impact on avian species than those using first- and second-generation technology (65–70% reduction) (Insignia Environmental 2009; Smallwood and Karas 2009; Brown et al. 2013). This potential reduction is attributed to the much larger distance between the ground and the lowest point of the turbine blade, placing the rotor-swept area above the zone most used by resident birds, including small raptors. These turbines also rotate more slowly (in terms of revolutions per minute), potentially allowing birds time to maneuver away from the blades. However, because of the much longer blade length, the tip speed is usually greater on these turbines than on first- and second-generation turbines. In contrast, evaluation of mortality data collected at windfarms around the country (including in the APWRA) have suggested that current-generation turbines may lead to an ~~substantial~~ increase in bat mortality (Barclay et al. 2007). Moreover, because of the scarcity of valid comparative data, ~~considerable~~ uncertainty remains regarding the effects of repowering on avian and bat mortality.

Response to Comment GP-4-4

In response to this comment, the second sentence in the last paragraph on page 2-11 of the Draft PEIR has been revised as shown below.

> Reclamation activities entail returning lands disturbed by infrastructure installation or removal to preproject conditions. Some facilities (e.g., roadways, turbine footings, underground collection lines) may be left in place if doing so is deemed to be more protective of natural resources than removal.

Response to Comment GP-4-5

In response to this comment, the third paragraph of *Existing Wind Turbine Removal* on page 2-17 of the Draft PEIR is revised as shown below.

> Grading ~~may be performed in some instances to match the surrounding contours, but it~~ will be avoided where appropriate to minimize and avoid disturbance of wildlife burrows that have adapted

to existing grade cuts. However, in some instances such grade cuts will be graded out to match the surrounding contours, if wildlife impacts can be avoided. New grading over existing foundations, equipment pads, or finger roads may be necessary for the installation of new access roads and foundation pads for repowered turbines.

Response to Comment GP-4-6

In response to this comment, the text in the second paragraph of *Postconstruction Reclamation* on pages 2-22 and 2-23 has been revised as shown below for clarification and consistency.

Reclamation activities involve returning lands disturbed by infrastructure installation or removal to preproject conditions. Some facilities (e.g., roadways, turbine footings, underground collector lines) may be left in place if doing so is deemed to be more protective of natural resources than removal. At each reclamation site, the entire site is contour graded (if necessary and environmentally beneficial) ~~to conform to natural surrounding topography~~, stabilized, and reseeded with an appropriate seed mixture to maintain slope stability. No soil is removed from the site. Figure 2-9 shows reclamation of a turbine pad site. Exceptions to returning a site to preinstallation conditions may be made, with approval of the County Planning Department, if such reclamation activities would or could create water quality issues (e.g., erosion) or if the activities may adversely affect special-status species (e.g., burrowing owl burrow complexes, upland habitat for California red-legged frog or California tiger salamander).

Response to Comment GP-4-7

The applicant comments that Parcel # 99A-1760-1-4 shown on Table 2-3 is not a part of the Golden Hills project and should not be shown in the table. It is correct that the parcel is not proposed to be included in the project, and for that reason it is shown with 0 acres. The following change is made to Table 2-3 in response to this comment.

Table 2-3. Golden Hills Project Parcels

Assessor's Parcel Number	Acreage
99A-1760-1-3	112.9
~~99A-1760-1-4[a]~~	~~0.0~~
99A-1770-2-1	119.7
99A-1770-2-2	38.8
99A-1770-2-3	47.6
99A-1770-3	157.4
99A-1770-4	159.1
99A-1770-999-99	3.8
99A-1780-1-4	549.8
99A-1785-1-14	199.4
99A-1790-1	156.8
99A-1790-2	153.1
99A-1790-3	319.9
99A-1795-1	634.7
99A-1810-1	252.0
99B-5650-1-4[a]	64.7
99B-5650-2-1	70.5
99B-5650-2-3[a]	0.1

Assessor's Parcel Number	Acreage
99B-5650-2-4[a]	70.0
99B-6400-1-10	51.0
99B-6400-1-8	0.4
99B-6400-1-9	0.7
99B-6400-2-2	3.4
99B-6400-2-3	0.2
99B-6400-2-6	296.0
99B-6400-4[a]	33.0
99B-6425-2-3	252.3
99B-7800-2	10.7
99B-7800-9	38.1
99B-7890-1-3[a]	133.8
99B-7890-2-4[a]	107.5
99B-7890-5[a]	8.9
99B-7900-1-3	15.8
99B-7900-1-4	0.1
99B-7900-1-5[a]	253.8
99B-7900-1-6	6.1
99B-7900-1-7[a]	148.0
99B-7900-2[a]	9.9

[a] Acreage shown is portion of parcel within project area; remainder of parcel is outside project area boundary

Response to Comment GP-4-8

The commenter correctly points out that the minimum distance from ground to rotor tip at 6:00 position, depending on the turbine model, would be 30 meters (98 feet) rather than 38 meters (125 feet) as stated on page 2-27 in Section 2.6.1 of the Draft PEIR in *Proposed Project—Wind Turbines*. The relevant text has been revised as shown below.

> Golden Hills would likely select a turbine with characteristics similar to those of the GE 1.7 XLe model: a 1.7 MW turbine with a hub height of 80–96 meters (262–315 feet), a rotor diameter of 100–115 meters (328–377 feet), a total height up to 153 meters (502 feet), and a minimum distance from ground to rotor tip at 6:00 position of ~~38~~ 30 meters (~~125~~ 98 feet).

Response to Comment GP-4-9

The commenter requests minor revisions to the Golden Hills Project description text in the third paragraph of *Existing Facilities* on page 2-27 in Section 2.6.1, *Golden Hills Wind Energy Facility Repowering Project*, of the Draft PEIR. The revisions shown below have been made.

> Existing roads and other disturbed areas not needed for the proposed project's new turbines would be decommissioned, contour graded (if necessary and if environmentally beneficial), stabilized, and reseeded with an appropriate seed mixture to maintain slope stability. ~~and recontoured, as appropriate, to maintain slope stability. Following recontouring, surface soils would be prepared for planting and revegetated with seed stock.~~ Temporary erosion control measures would be implemented to maintain topsoil and revegetation.

Response to Comment GP-4-10

The commenter has provided additional information pertaining to the battery storage units that would constitute part of the proposed Golden Hills Project. The third paragraph of *Collector Substation* on page 2-30 of the Draft PEIR has been revised as shown below to reflect this new information.

~~Modular battery storage unit(s) could be installed within enclosed structures located within the proposed facility's substation area. The units would be inspected and maintained on an as-needed basis, in accordance with the facility's operational requirements and applicable regulations.~~ An energy storage unit encompassing approximately 1 acre would be constructed within the 3-acre permanent disturbance footprint of the collector substation facility. The modular design would accommodate lithium-ion batteries, either in a building or in approximately thirty 40-foot International Standard Organization (ISO) containers. The facility would contain all necessary energy management hardware and software to manage energy supply from the turbines to the power grid, as well as a fire detection and suppression system and air conditioning. Construction is anticipated to require approximately 4 months. Battery replacement would be required over the life of the project, and waste batteries would be removed from the site and transported either to the manufacturer or to an approved battery reprocessor for recycling or disposal.

Response to Comment GP-4-11

The commenter is requesting revisions to the description of reclamation activities associated with construction-related temporary disturbance areas that appears in the discussion of Construction Staging Areas on page 2-33, most notably the removal of a reference to replacing stockpiled topsoil. Because that practice is already specified in Mitigation Measure BIO-5c, that change will not be made. The remaining revisions have been made to the text as shown below to add consistency with other discussions.

Following completion of construction activities, the contractor would restore the temporary construction staging areas. The gravel surface would be removed and the areas would be ~~recontoured~~ contour graded (if necessary and if environmentally beneficial) to conform with the natural topography, stockpiled topsoil would be replaced, and the area would be ~~seeded with an approved mixture of grasses~~ stabilized and reseeded with an appropriate seed mixture.

Response to Comment GP-4-12

The commenter, the Golden Hills project applicant, proposes changes to the project description for the Patterson Pass project description, which was based on information provided by the project proponent, Patterson Pass, LLC. The text has not been changed as requested.

Response to Comment GP-4-13

The text of the PEIR that the commenter references is part of the description of existing conditions and not of proposed changes to existing conditions associated with project or program construction and operation. Accordingly, no changes to the text of the PEIR are required.

Response to Comment GP-4-14

The mitigation measure noted by the commenter (Mitigation Measure AES-3) is necessary to reduce the identified impact to a less-than-significant level. Should the County decide not to adopt this mitigation measure, the impact would remain significant and unavoidable.

Response to Comment GP-4-15

The commenter states that there is no established threshold for evaluating impacts of shadow flicker. The County developed Mitigation Measure AES-5 based on the best available information available and examples of mitigation measures implemented in other jurisdictions. Please see Response to Comment GP-2-2 for more detailed discussion and revisions made to the mitigation measure. Additionally, NextEra (the commenter) provided the shadow flicker analysis conducted for the Golden Hills Project. That report is included as Appendix G of the Final PEIR.

Response to Comment GP-4-16

As discussed in Impacts AES-3b, AES-4b, and AES-5b on pages 3.1-22, 3.1-26, and 3.1-29 of the Draft PEIR, while existing wind turbines are present in portions of the Golden Hills project area, other portions of the project area have not previously been developed with wind turbines. The discussion of Impact AES-6b on page 3.1-31 has been revised as shown below for clarification.

> **Impact AES-6b: Consistency with state and local policies—Golden Hills Project (less than significant with mitigation)**
>
> Under the Golden Hills Project, the County would be obligated to comply with measures set forth to protect visual resources along scenic roadways and open space areas identified for protection, as detailed in the Scenic Route and Open Space Elements of the Alameda County General Plan (Alameda County 1966). In addition, the County is obligated to comply with measures set forth in the ECAP to protect visual resources such as sensitive viewsheds, streets and highways, scenic highways, and areas affected by windfarms (Alameda County 2000). The turbines would be neutral and nonreflective (e.g., dull white or light gray) so as to blend with the surroundings. ~~However,~~While the proposed project would replace smaller existing turbines with ~~still introduce~~ larger, more visually obtrusive turbines within existing viewsheds, there will be considerably fewer turbines as a result of repowering ~~of scenic viewsheds in proximity to sensitive viewers and residences~~. Implementation of Mitigation Measures AES-2a, AES-2b, AES-2c, and AES-3, and AES-5 would reduce this impact to a less-than-significant level.

Response to Comment GP-4-17

The commenter requests that the Midway Substation shown in Figure 3.1-1 be identified as a PG&E facility. The revision has been made to the figure caption.

Response to Comment GP-4-18

The commenter requests that the removal of old turbines be considered in the analysis of the loss of Prime Farmland. Because the removal of old turbines would only affect grazing land, no revision to the PEIR is necessary.

Response to Comment GP-4-19

The commenter correctly points out an editorial word emission in the discussion of the San Joaquin Valley Air Pollution Control District on page 3.3-6 of Section 3.3.1, *Air Quality—Existing Conditions*, of the Draft PEIR. The text has been revised as shown below.

> In addition, because the SJVAB is downwind of the project site, some emissions that are emitted at the project site within the SFBAAB would likely drift into the SJVAB through a process known as transport.

Response to Comment GP-4-20

The commenter suggests revising language in Table 3.3-3 for consistency with other table entries. The text in Table 3.3-3 on page 3.3-13 of the Draft PEIR has been revised as shown below.

Table 3.3-3. Federal and State Attainment Status for Alameda County

Criteria Pollutant	Federal Designation	State Designation
O_3 (1-hour)	(No federal standard)[a]	Serious Nonattainment
O_3 (8-hour)	Marginal Nonattainment (2008)	Nonattainment
CO	Maintenance	Attainment
PM10	Attainment	Nonattainment
PM2.5	Nonattainment (2006)	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment (2008)	Attainment
Sulfates	(No Federal Standard)	Attainment
Hydrogen sulfide	(No Federal Standard)	Unclassified
Visibility	(No Federal Standard)	Unclassified

Sources: California Air Resources Board 2011; U.S. Environmental Protection Agency 2012.

O_3 = ozone.
CO = carbon monoxide.
PM10 = particulate matter less than or equal to 10 microns.
PM2.5 = particulate matter less than or equal to 2.5 microns.
NO_2 = nitrogen dioxide.
SO_2 = sulfur dioxide.

[a] The federal 1-hour standard of 12 parts per hundred million (pphm) was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in the state implementation plans.

Response to Comment GP-4-21

Because the language in the mitigation measure referenced by the commenter is standard usage, the County has decided not to make the suggested change to the text of the PEIR.

Response to Comment GP-4-22

The commenter requests revising Mitigation Measure MM-AQ-2b to remove the soil moisture content and sampling requirement. While the wind speed requirement identified in Mitigation Measure MM-AQ-2b is a standard BAAQMD mitigation requirement for projects with construction emissions in excess of their significance thresholds, the text of the first bullet of Mitigation Measure AQ-2b on page 3.2-26 of the Draft PEIR has been revised as shown below.

- During construction activities, all exposed surfaces will be watered at a frequency adequate to meet and maintain ~~minimum soil moisture of 12%. Moisture content can be verified by lab samples or moisture probe~~fugitive dust control requirements of all relevant air quality management entities.

Response to Comment GP-4-23

The commenter requests revising Mitigation Measure MM-AQ-2b to remove the wind break requirement. The wind break requirement identified in Mitigation Measure MM-AQ-2b is a standard BAAQMD mitigation requirement for projects with construction emissions in excess of their significance thresholds.

Response to Comment GP-4-24

The commenter has not provided the County with any data that would allow quantification of the amount of reduction of emissions from existing operations. Accordingly, the County has decided not to make the suggested change to the text of the PEIR.

Response to Comment GP-4-25

As described on page 1-8 in *History since 2001* of the Draft PEIR, the provisions of the program-level APP were incorporated into the program-level mitigation measures presented in Section 3.4, *Biological Resources*, of the EIR. The second paragraph of *2007 Settlement Agreement* on page 3.4-7 of the Draft PEIR has been revised as shown below.

> As an alternative to the NCCP called for in the Settlement Agreement, the County prepared this PEIR with mitigation measures to provide a framework for review and approval of wind projects in the APWRA and to promote conservation measures to benefit avian species. As described in Section 1.2.4, *Conditional Use Permits*, the County ~~has~~ developed a draft *Avian Protection Program* (APP) to provide a framework and process for wind energy projects to ~~comply with~~address applicable statutes (e.g., MBTA and BGEPA) through the repowering process. The APP provided a broad evaluation of existing environmental conditions, bird use, and avian fatalities in the program area. It focused on avian mortality associated with repowering projects—specifically construction, operation, monitoring, and mitigation. The key provisions of the APP were ~~have been~~ incorporated into the program-level mitigation measures of this PEIR ~~as impacts and mitigation measures~~. Project proponents will be expected to develop project-specific APPs, incorporating mitigation, monitoring, and adaptive management strategies as set forth in this PEIR.

Response to Comment GP-4-26

Please see Response to Comment GP-4-1 for a response to this comment.

Response to Comment GP-4-27

The commenter refers to a quantification of temporary impacts included in a project description that NextEra submitted to the County; however, the table in which the temporary impacts is quantified is not consistent with more specific descriptions provided in the text of that project description. Specifically, the bulk of the temporary impact acreage is attributed to "cut-and-fill," which presumably consists largely of turbine foundations and grading for roadways. Because these impact mechanisms are described and quantified individually by activity, no change has been made to the text of the Draft PEIR.

Response to Comment GP-4-28

The County has considered this comment from the applicant, and, exercising its own independent judgment as the Lead Agency, has decided not to make the suggested change to the text of the PEIR.

Response to Comment GP-4-29

The commenter suggests revisions to Mitigation Measure BIO-1d. Mitigation Measure BIO-1d was developed to be consistent with the avoidance, minimization, and mitigation measures set forth in the EACCS.

Response to Comment GP-4-30

The requested change is not appropriate for the impact discussion; however, these issues are addressed in *Habitat Enhancements* on page 1-9 if the Draft PEIR.

Response to Comment GP-4-31

Impact BIO-4a-1, like Impacts BIO-4a-2, BIO-4b, and BIO-4c, is identified in the PEIR as a significant impact. As required by CEQA, the PEIR identifies available mitigation measures that will reduce the impact to a less-than-significant level. These mitigation measures are listed below.

Mitigation Measure BIO-1b: Implement best management practices to avoid and minimize impacts on special-status species

Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities in environmentally sensitive areas

Mitigation Measure BIO-3a: Conduct preconstruction surveys for habitat for special-status wildlife species

Mitigation Measure BIO-4a: Implement measures to avoid or protect habitat for valley elderberry longhorn beetle

Mitigation Measure BIO-4b: Compensate for direct and indirect effects on valley elderberry longhorn beetle

Mitigation Measure BIO-4b reflects standard mitigation practice for valley elderberry longhorn beetle and would apply only, as stated in Mitigation Measure BIO-4b, "if elderberry shrubs cannot be avoided and protected as outlined in Mitigation Measure 4a," in which case the impact would be significant if mitigation were not implemented. The commenter's suggested change to the mitigation measure would defer the mitigation to a decision by another agency. Mitigation Measure BIO-4b presents the required detail on the mitigation in order to show how the impact would be reduced to a less-than-significant level.

Response to Comment GP-4-32

The commenter suggests that Mitigation Measure BIO-5a on page 3.4-73 of the Draft PEIR should be revised to refer to NPDES construction general requirements for stormwater. The intent of this mitigation measure is to avoid and minimize impacts on special-status amphibians. Applicants must still adhere to NPDES requirements, but compliance with stormwater management is not the intent or focus of this mitigation measure; rather, the intent is to limit ground-disturbing activities to avoid and minimize impacts on special-status amphibians when they may be most active. The first paragraph of Mitigation Measure BIO-5a on page 3.4-73 of the Draft PEIR has been revised as shown below.

All project proponents will ensure that BMPs and other appropriate measures, in accordance with measures developed for the EACCS, be incorporated into the appropriate design and construction documents. *Implementation of some of these measures will require that the project proponent obtain incidental take permits from USFWS (California red-legged frog and California tiger salamander) and from CDFW (California tiger salamander only) before construction begins.* Additional conservation measures or conditions of approval may be required in applicable project permits (e.g., ESA or CESA incidental take authorization). The applicant will comply with the State of California State Water Resources Control Board NPDES construction general requirements for stormwater.

Response to Comment GP-4-33

The commenter states that the monitoring of restoration areas should be conducted during a longer period to allow for the detection of invasive species. The commenter also requests that additional text be added to the mitigation measure regarding drought conditions. In response to this comment, Mitigation Measure BIO-5c, on pages 3.4-74 and 3.4-75 of the Draft PEIR has been revised as shown below.

Within 30 days prior to any ground disturbance, a qualified biologist will prepare a Grassland Restoration Plan in coordination with CDFW and subject to CDFW approval, to ensure that temporarily disturbed annual grasslands and areas planned for the removal of permanent roads and turbine pad areas are restored to preproject conditions. The Grassland Restoration Plan will include but not be limited to the following measures.

- Gravel will be removed from areas proposed for grassland restoration.
- To the maximum extent feasible, topsoil will be salvaged from within onsite work areas prior to construction. Imported fill soils will be limited to weed-free topsoil similar in texture, chemical composition, and pH to soils found at the restoration site.
- Where appropriate, restoration areas will be seeded (hydroseeding is acceptable) to ensure erosion control. Seed mixes will be tailored to closely match that of reference site(s) within the program area and should include native or naturalized, noninvasive species sourced within the project area or from the nearest available location.
- Reclaimed roads will be restored in such a way as to permanently prevent vehicular travel.

The plan will include a requirement to monitor restoration areas annually (between March and ~~May~~October) for up to 3 years following the year of restoration. The restoration will be considered successful when the percent cover for restored areas is 70% absolute cover of the planted/seeded species compared to the percent absolute cover of nearby reference sites. No more than 5% relative cover of the vegetation in the restoration areas will consist of invasive plant species rated as "high" in Cal-IPC's California Invasive Plant Inventory Database (http://www.cal-ipc.org). Remedial measures prescribed in the plan will include supplemental seeding, weed control, and other actions as determined necessary to achieve the long-term success criteria. Monitoring may be extended if necessary to achieve the success criteria or if drought conditions preclude restoration success. Other performance standards may also be required as they relate to special-status species habitat; these will be identified in coordination with CDFW and included in the plan. The project proponent will provide evidence that CDFW has reviewed and approved the Grassland Restoration Plan. Additionally, the project proponent will provide annual monitoring reports to the County by January 31~~August 1~~ of each year, summarizing the monitoring results and any remedial measures implemented (if any are necessary) during the previous year.

Response to Comment GP-4-34

The commenter states that the reporting period should be extended commensurate with the revisions suggested in comment GP-4-33. The County agrees with this comment and has modified Mitigation Measure BIO-5c as shown in Response to Comment GP-4-33.

Response to Comment GP-4-35

The commenter suggests a change to Mitigation Measure BIO-8a on page 3.4-86 of the Draft PEIR regarding when suitable nesting trees for nesting birds should be removed. As described in the second paragraph of *Impacts and Mitigation Measures* on page 3.4-56 of the Draft PEIR, mitigation measures for biological resources were developed to be consistent with the avoidance, minimization, and mitigation measures set forth in the EACCS. Because Mitigation Measure BIO-8a uses typical nesting periods, the County has decided not to make the suggested change to the text of the PEIR. However, the word "typically" has been added to the date range as shown in Response to Comment FA-1-13.

Response to Comment GP-4-36

In response to this comment, the first paragraph of Mitigation Measure BIO-15 on page 3.4-134 of the Draft PEIR has been revised as shown below.

Mitigation Measure BIO-15: Compensate for the loss of alkali meadow habitat

If alkali meadow habitat is filled or disturbed as part of a repowering project, the project proponent will compensate for the loss of this habitat to ensure no net loss of habitat functions and values. Compensation ratios will be based on site-specific information and determined through coordination with state and federal agencies (CDFW, USFWS, USACE). Unless specified otherwise by a resource agency, t~~T~~he compensation will be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of onsite restoration/creation, offsite restoration, and mitigation credits. A restoration and monitoring plan will be developed and implemented. The plan will describe how alkali meadow habitat will be created and monitored.

Response to Comment GP-4-37

The commenter requests a change to the description of grading activities associated with postconstruction restoration in Impact BIO-17b. The text of Impact BIO-17b on page 3.4-138 of the Draft PEIR has been revised as shown below.

Ground-disturbing activities would result in the permanent loss of common habitats as a result of constructing new permanent facilities and the temporary loss of common habitats as a result of constructing temporary facilities and landscape reclamation. These activities would create minor changes in total acreage of common habitats in the project area, primarily in the annual grassland plant community.

All lands disturbed by infrastructure installation or removal would be returned to preproject conditions. At each reclamation site, the topography would be contour graded ~~to match the contours of the natural surrounding landscape~~ (if necessary and if environmentally beneficial), stabilized, and reseeded with an appropriate seed mixture~~, and allowed to become revegetated without assistance~~ to maintain slope stability. Reclamation activities would be guided by a reclamation plan developed in coordination with the County and other applicable agencies.

This impact would be less than significant. No mitigation is required.

Response to Comment GP-4-38

The commenter correctly points out that the historical resource described in Impact CUL-1b on page 3.5-17 of the Draft PEIR is not in fact within the project area. The text of the impact discussion has been revised as shown below.

Impact CUL-1b: Cause a substantial adverse change in the significance of a historic resource—Golden Hills Project (less than significant with mitigation)

The Golden Hills Project may cause a substantial adverse change in the significance of ~~a~~ three potential historical resources: P-01-000163/CA-ALA-441H, a historic-era ranch complex consisting of five separate features; P-01-000177/CA-ALA-455H, the Santucci Property Homestead, a historic-era ranch complex with standing buildings; and P-01-010957, the remnants of an abandoned corral. ~~This resource is the remains of an earthen dam that measured 30 feet long, 12 feet wide, and 10 feet high. Per the 1999 recordation, the associated pond, located behind it, had dried up.~~ No other features are recorded or were observed during the Google Earth remote reconnaissance survey by the architectural historian in June 2013.

~~Dam #3 has not been determined eligible to the CRHR and NRHP.~~ No determination regarding eligibility for inclusion in the CRHR and NRHP has been made for any of the three resources. However, Section 15064.5 states:

> The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register or historical resources, or identified in an historical resources survey does not preclude a lead agency from determining that the resource may be an historical resources as defined in Public Resources Code section 5020.1(j) or 5024.1

Should the proposed project require the demolition, destruction, or alteration of these resources or ~~its~~ their immediate surroundings such that the significance of the resource is materially impaired, then a substantial adverse change would result. Implementation of Mitigation Measure CUL-1a would reduce this impact to a less-than-significant level by avoiding the historic resources. If avoidance is infeasible, implementation of Mitigation Measure CUL-1b would be employed. Because the ~~dam is an engineered feature~~two historic-era ranch properties and the corral are landscape features, a~~n~~ Historic American Landscapes Survey (HALS) ~~HAER~~ would be appropriate documentation to reduce this impact to a less-than-significant level.

Response to Comment GP-4-39

The commenter suggests revising Table 3.7-1 to more clearly show that the concentrations listed in the left column apply to the values in the right column of the table. For clarification for the reader of the PEIR, Table 3.7-1 on page 3.7-9 of the Draft PEIR has been revised as shown below.

Table 3.7-1. Lifetimes and Global Warming Potentials of Several Greenhouse Gases

Greenhouse Gases	Global Warming Potential (100 years)	Lifetime (years)	2005 Atmospheric Abundance
CO_2 ~~(ppm)~~[a]	1	50–200	379 ppm
CH_4 ~~(ppb)~~	25	12	1,758–1,874 ppb
N_2O ~~(ppb)~~	298	114	323–324 ppb
HFC-23 ~~(ppt)~~	14,800	270	18 ppt
HFC-134a ~~(ppt)~~	1,430	14	64 ppt
HFC-152a ~~(ppt)~~	124	1.4	3.9 ppt
SF_6 ~~(ppt)~~[a]	22,800	3,200	7.1–7.5 ppt

Sources: Intergovernmental Panel on Climate Change 2007b; Carbon Dioxide Information Analysis Center 2013; National Oceanic and Atmospheric Administration 2013.

CF = hydrofluorocarbons.
CH_4 = methane.
CO_2 = carbon dioxide.
N_2O = nitrous oxide.
~~ppb = parts per billion.~~
ppm = parts per million by volume.
ppb = parts per billion by volume.
ppt = parts per trillion by volume.

Response to Comment GP-4-40

The commenter asks whether the calculations for concrete sinks account for the reduction in concrete associated with removing the old turbines/infrastructure that is no longer needed and how this reduction would reduce the amount of CO_2 being reabsorbed by the existing turbines/infrastructure. The analysis presented in the Draft PEIR does not include potential reductions in CO_2 reabsorption (i.e., increases in CO_2 emissions) associated with reduced concrete carbonation, as it is currently unknown how many cubic yards of concrete associated with the existing infrastructure would be removed. While this would result in a minor increase in GHG emissions due to the loss of cement that would absorb CO_2, this minor increase in GHG emissions would not be sufficient to change the findings reported in the Draft PEIR. No revisions to the Draft PEIR are required.

Response to Comment GP-4-41

The difference between two A-weighted values is expressed as "dB" not "dBA." A decibel is an expression of a ratio. Similarly, a decibel change expresses the ratio that a sound level has changed, making expression of a decibel change as "dBA" incorrect. The third paragraph of *Background Information on Noise* on page 3.11.1 of the Draft PEIR has been revised as shown below.

> In general, human sound perception is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level when comparing similar sounds (i.e., traffic to traffic).

Response to Comment GP-4-42

In response to this comment, the first paragraph of *Other Factors Related to Wind Turbines* on page 3.11-3 of the Draft PEIR has been revised as shown below.

> Operating wind turbines can generate two types of sound: mechanical sound from components such as gearboxes, generators, yaw drives, and cooling fans; and aerodynamic sound from the flow of air over and past the rotor blades. Modern wind turbine design has greatly reduced mechanical sound, which is generally unnoticeable in comparison with the aerodynamic sound, which is often described as a "swishing" or "whooshing" sound. The International Standard IEC 61400-11 for wind turbine noise assessment provides a requirement for evaluating tonality close to the turbine. Far field tonality at typical residential distances may be evaluated using a variety of methods; however, if a tone is not present at the IEC test location it should not materialize at the residence. Tones are then divided into categories of prominent tone, audible tone, or no tone. (Illingworth & Rodkin 2006.).

Response to Comment GP-4-43

In response to this comment, the third and fourth paragraphs of *Other Factors Related to Wind Turbines* on page 3.11-4 of the Draft PEIR have been revised as shown below.

> Wind turbines produce a broadband sound (i.e., the sound occurs over a wide range of frequencies, including low and high frequencies). Low-frequency sounds are in the range of 20–100 Hz, and infrasonic sound (or *infrasound*) is low-frequency sound of less than 20 hertz. Compared with higher frequency sound, low-frequency sound propagates over longer distances, is transmitted through buildings more readily, and at high levels can excite structural vibrations (e.g., rattling windows or doors). The threshold of perception, in decibels, also increases as the frequency decreases. For example, in the frequency range where humans hear best (in the low kilohertz), the threshold of hearing is at about 0 dB, but at a frequency of only 10 Hz, the threshold of hearing is at about 100 dB (Rogers et al. 2006a).
>
> Older wind turbines—particularly those in which the blades were on the downwind side of the tower—produced more low-frequency sound because their towers blocked wind flow, causing the blades to pass through more turbulent air. Modern, upwind turbines produce a broadband sound that includes low-frequency sounds, but not at significant levels. A primary cause for low-frequency sounds in modern turbines is the blade passing through ~~the change in air flow at the front of the tower, and this can be aggravated by~~ unusually turbulent wind conditions. ~~This effect is generally referred to as blade amplitude modulation because the aerodynamic noise generated by the blades (the "swishing" sound) is modulated as the turbine blades pass through uneven air velocities.~~ The uneven air that causes this effect may be due to interaction of other turbines, excessive wind shear, or topography (Bowdler 2008). These factors may also contribute to periodic increases in the prominence of blade swish.

Response to Comment GP-4-44

The County may use any standards deemed reasonable and appropriate for the assessment of impacts under CEQA. The County is not limited to the use of current County regulatory requirements. Although the standards listed in the CUP are not a regulatory requirement, they have historically been used by the County in the assessment of wind turbine noise impacts. Accordingly, it is reasonable and acceptable for the County to continue to use these standards in the assessment of noise impacts for this project. The recent U.S Department of Energy guidance document cited in this comment does, however, present substantial evidence that measuring C-weighted sound levels at typical residential distances from a turbine is problematic, and variation in dBC levels were not found to correlate with wind turbine operations. The challenge with measuring C-weighted sound levels at residential setback distances is related to wind-induced microphone error where wind

blowing through the microphone windscreen causes low-frequency sound energy to substantially increase. The microphone is therefore measuring low-frequency sound energy induced by the microphone and windscreen rather than the wind turbine itself. The practical result of this is that a C-weighted sound level measured at a residential distance does not accurately represent the sound level generated by a nearby wind turbine. In addition, dBC is currently not commonly used as a measure or indicator of community response to noise from wind turbines. Accordingly, the County agrees that C-weighting should not be used to assess noise impacts or noise compliance. All references to C-weighting have been removed from the impact assessment and Mitigation Measure NOI-1. For reasons discussed in Response to Comment GP-4-46 this does not change any noise impact conclusions identified in the noise chapter. The text and table following Table 3.11-5 in *Wind Turbine Noise* on page 3.11-10 of the Draft PEIR have been deleted as shown below.

> The proposed program would replace the existing turbines (first- and second-generation turbines) with fewer and larger current-generation turbines. Section 2.3 of this Program EIR, *Wind Turbine Technology*, provides a description and comparison of existing and proposed turbines. The specific types or sound data of current generation wind turbines to be used in the program area are not known and, therefore, the levels of noise produced by the installation of new turbines cannot be specifically determined. However, noise produced by current generation turbines such as the REpower MM 92 turbine and the Vestas V90 turbine are known to produce a sound level of about 44 dBA at 1,000 feet (Solano County 2011). Continuous operation over a 24-hour period would result in about 50 dBA (L_{dn}) at 1,000 feet. At any given receptor location, the received noise level from turbine operation could be potentially influenced by several turbines, depending on the geometric relationship between the turbines and the receptor. Table 3.11-5 provides an indication of potential received noise levels expressed in dBA (L_{dn}) based on the distance to a receiver and the number of turbines influencing noise received at the receptor. The table also highlights (using shading) the distances within which the County standard of 55 dBA (L_{dn}) would be exceeded. Under the assumption that up to 10 turbines could affect the received noise level at a receptor, the results in Table 3.11-5 indicate that the County noise standard of 55 dBA (L_{dn}) could be exceeded within about 1,750 feet of a receptor.

Table 3.11-5. Turbine Noise Level, dBA (L_{dn}), as a Function of Distance and Number of Turbines

	Number of Turbines Influencing the Received Noise Level						
Distance (feet)	1	2	3	4	5	7	10
500	56	59	61	62	63	64	66
550	55	58	60	61	62	63	65
750	52	55	57	58	59	60	62
1,000	50	53	55	56	57	58	60
1,150	49	52	54	55	56	57	59
1,250	48	51	53	54	55	56	58
1,400	47	50	52	53	54	55	57
1,500	46	49	51	52	53	54	56
1,750	45	48	50	51	52	53	55
2,000	44	47	49	50	51	52	54
2,500	42	45	47	48	49	50	52
3,000	40	43	45	46	47	48	50

Note: Based on simple geometric attenuation of 6 dB per doubling of distance.

~~C-weighted sound levels provide a measure of low frequency sound energy associated with operation of a wind turbine. C-weighted sound levels for the REpower MM 92 turbine and the Vestas V90 are about 10 dB higher than A-weighted sound levels. The C-weighted county standard for wind turbines is 70 dBC (L_{dn}).~~

~~Table 3.11-6 provides an indication of potential received noise levels expressed in dBC (L_{dn}) based on the distance to a receiver and the number of turbines influencing noise received at the receptor. The table also highlights distances within which the County standard of 70 dBC (L_{dn}) would be exceeded. Under the assumption that up to 10 turbines could affect the received noise level at a receptor, the results in Table 3.11-6 indicate that the County noise standard of 70 dBC(L_{dn}) could be exceeded within about 1,000 feet of a receptor.~~

~~Table 3.11-6. Turbine Noise Level, dBC (L_{dn}), as a Function of Distance and Number of Turbines~~

	~~Number of Turbines Influencing the Received Noise Level~~						
~~Distance (feet)~~	~~1~~	~~2~~	~~3~~	~~4~~	~~5~~	~~7~~	~~10~~
~~500~~	~~66~~	~~69~~	~~71~~	~~72~~	~~73~~	~~74~~	~~76~~
~~550~~	~~65~~	~~68~~	~~70~~	~~71~~	~~72~~	~~73~~	~~75~~
~~650~~	~~64~~	~~67~~	~~69~~	~~70~~	~~71~~	~~72~~	~~74~~
~~700~~	~~63~~	~~66~~	~~68~~	~~69~~	~~70~~	~~71~~	~~73~~
~~800~~	~~62~~	~~65~~	~~67~~	~~68~~	~~69~~	~~70~~	~~72~~
~~1,000~~	~~60~~	~~63~~	~~65~~	~~66~~	~~67~~	~~68~~	~~70~~
~~2,500~~	~~52~~	~~55~~	~~57~~	~~58~~	~~59~~	~~60~~	~~62~~
~~3,000~~	~~50~~	~~53~~	~~55~~	~~56~~	~~57~~	~~58~~	~~60~~

Similarly, the second bullet of *Determination of Significance* on page 3.11-11 of the Draft PEIR has been deleted as shown below.

In accordance with Appendix G of the State CEQA Guidelines and the County conditions of approval for the existing turbine operations, program Alternative 1, program Alternative 2, the Golden Hills project, or the Patterson Pass project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Exposure of residences to noise from new wind turbines in excess of 55 dBA (L_{dn}) where wind turbine noise is currently less than 55 dBA (L_{dn}). In the situation where the dwelling unit is on the same parcel being leased for windfarm, 65 dBA (L_{dn}) is used as the threshold.
- ~~Exposure of residences to noise from new wind turbines in excess of 70 dBC (L_{dn}) where wind turbine noise is currently less than 70 dBC (L_{dn}).~~
- Exposure of residences to a daily noise increase in L_{dn} value of more than 5 dB from the addition of new wind turbines where the existing noise level is in excess of 55 dBA (L_{dn}). In the situation where the dwelling unit is on the same parcel being leased for windfarm, 65 dBA (L_{dn}) is used as the threshold.
- Exposure of residences to equipment noise associated with construction activities that exceed Alameda County noise ordinance standards (Table 3.11-3) during nonexempt hours (7 p.m. to 7 a.m. on weekdays and 5 p.m. to 8 a.m. on Saturday and Sunday).

Finally, numerous minor revisions to eliminate C-weighting from the analysis have been made throughout the chapter; however, to avoid excessive reproduction of text, those changes are not repeated here. They can be reviewed in the underline/strikeout version of the PEIR that has been provided on CD with the Final PEIR.

Response to Comment GP-4-45

The County agrees that the paragraph immediately following Table 3.11-3 on page 3.11-7 of the Draft PEIR is not applicable to the proposed project. The paragraph has been removed as shown below. The change does not affect any impact conclusions in the Draft PEIR.

~~The County Zoning Ordinance (County General Code, Chapter 17) restricts noise from commercial activities by prohibiting any use that would generate a noise or vibration that is discernible without instruments beyond the property line. This performance standard does not apply to transportation activities or temporary construction work.~~

The provisions of the ordinance do not apply to noise sources associated with construction, provided the activities do not take place before 7 a.m. or after 7 p.m. on any day except Saturday or Sunday, or before 8 a.m. or after 5 p.m. on Saturday or Sunday.

Response to Comment GP-4-46

The County may use any standards deemed reasonable and appropriate for the assessment of impacts under CEQA. The County is not limited to the use of current County regulatory requirements. Although the standards listed in the CUP are not a regulatory requirement, they have historically been used by the County in the assessment of wind turbine noise impacts. Accordingly, it is reasonable and acceptable for the County to continue to use these standards in the assessment of noise impacts for this project. However, for reasons discussed in Response to Comment GP-4-44, the County agrees that C-weighted sound levels should not be used to assess noise impacts. Accordingly, the 70 dBC (Ldn) noise metric has been removed from this assessment and noise compliance requirements specified in Mitigation Measure NOI-1. It is important to note that the difference between dBA and dBC is typically less than 15 dB for modern wind turbines. Consequently, the 55 dBA threshold would be exceeded before the 70 dBC threshold is exceeded. This means that the 55 dBA threshold governs the impact conclusion and makes the 70 dBC threshold irrelevant. Removing the 70 dBC (Ldn) threshold, therefore, does not change any impact conclusions, does not alter protection to residences from noise provided by Mitigation Measure NOI-1, and does not result in a relaxation of the noise significance threshold. Mitigation Measure NOI-1 on pages 3.11-12 and 3.11-13 of the Draft PEIR has been revised as shown below.

Mitigation Measure NOI-1: Perform project-specific noise studies and implement measures to comply with County noise standards

The applicant for any proposed repowering project will retain a qualified acoustic consultant to prepare a report that evaluates noise impacts associated with operation of the proposed wind turbines. This evaluation will include a noise monitoring survey to quantify existing noise conditions at noise sensitive receptors located within 2,000 feet of any proposed turbine location. This survey will include measurement of the daily A-weighted ~~and C-weighed~~ L_{dn} values over a 1-week period and concurrent logging of wind speeds at the nearest meteorological station. The study will include a site-specific evaluation of predicted operational noise levels at nearby noise sensitive uses. If operation of the project is predicted to result in noise in excess of 55 dBA (L_{dn}) where noise is currently less than 55 dBA (L_{dn})~~,~~ or result in a 5 dB increase where noise is currently greater than 55 dBA(L_{dn}), ~~or result in noise that exceeds 70 dBC (L_{dn}),~~ the applicant will modify the project, including selecting new specific installation sites within the program area, to ensure that these performance standards will not be exceeded.

Methods that can be used to ensure compliance with these performance standards include but not limited to increasing the distance between proposed turbines and noise sensitive uses and the use of alternative turbine operational modes to reduce noise. Upon completion of the evaluation, the project applicant will submit a report to the County demonstrating how the project will comply with

these performance standards. After review and approval of the report by County staff, the applicant will incorporate measures as necessary into the project to ensure compliance with these performance standards.

Response to Comment GP-4-47

Please see Responses to Comments GP-4-44 and GP-4-46 for a response to this comment regarding use of dBC levels.

Response to Comment GP-4-48

In response to this comment, the second paragraph of *Construction Noise* on page 3.11-11 of the Draft PEIR has been revised as shown in Response to Comment GP-4-46.

Please see also Response to Comment GP-4-44.

Response to Comment GP-4-49

Please see Responses to Comments GP-4-44 and GP-4-46 for a response to this comment regarding use of dBC levels.

Response to Comment GP-4-50

Please see Responses to Comments GP-4-44 and GP-4-46 for a response to this comment regarding use of dBC levels.

Response to Comment GP-4-51

Please see Responses to Comments GP-4-44 and GP-4-46. With regard to C-weighting, no changes to the Draft PEIR are required. The suggested revision to the second paragraph of Mitigation Measure NOI-1 on page 3.11-13 of the Draft PEIR is appropriate and has been implemented as shown below. The suggested text change regarding selecting new specific installation sites is not necessary since selecting new sites is inherent in the process of "increasing the distance between proposed turbines and noise sensitive areas."

Response to Comment GP-4-52

Please see Responses to Comments GP-4-44 and GP-4-46 for a response to this comment regarding use of dBC levels.

Response to Comment GP-4-53

Please see Responses to Comments GP-4-44 and GP-4-46 for a response to this comment regarding use of dBC levels.

Response to Comment GP-4-54

Please see Responses to Comments GP-4-44 and GP-4-46 for a response to this comment regarding use of dBC levels.

Response to Comment GP-4-55

The commenter notes that continued operation of the existing turbines would generate wind energy and reduce GHG emissions concomitant with the amount of wind energy generated by those turbines, and that, consequently, not all the benefit of the proposed program would be eliminated by implementing the No Repowering, Reauthorization of Existing CUPs alternative. Accordingly, the discussion of *Greenhouse Gas Emissions* in Section 4.2.1, *No Project—No Repowering, Reauthorization of Existing CUPs*, on page 4-22 of the Draft PEIR has been revised as shown below.

> The No Project—No Repowering, Reauthorization of Existing CUPs alternative would not generate any short-term construction-related GHG emissions. ~~The~~ However, the full annual GHG emissions reduction of approximately 97,000 metric tons of CO_2e associated with the proposed program would not occur under this alternative, although wind energy would still be generated and GHG emissions would be reduced concomitant with the amount of wind energy generated by those turbines. This alternative would have no significant impact on GHG emissions.

Response to Comment GP-4-56

The Draft PEIR makes the conclusion noted by the commenter, as stated in the discussion of *Hazards and Hazardous Materials* on page 4-22 of the Draft PEIR.

> Operational impacts associated with hazards and hazardous materials would be similar to those under the proposed program, with the exception of potential blade throw hazards. The potential blade throw hazard would be greater, because the existing old-generation turbines are subject to higher rates of structural failure than are new-generation turbines. Consequently, impacts related to hazards and hazardous materials under this alternative would be greater than under the proposed program.

Response to Comment GP-4-57

The commenter provides updated information on golden eagle fatalities recorded in the second year of postconstruction monitoring at the Vasco Wind Project in Contra Costa County. The County appreciates this information and has incorporated it into the Final PEIR as described in Master Response 4, *Estimated Avian Mortality Rates Methodology*. The commenter also states that the baseline (nonrepowered) rates in the Draft PEIR incorporate the lower rates for repowered areas (Diablo Winds and Buena Vista), and that the rates, consequently, are artificially reduced for areas where repowering has not yet occurred. The commenter is incorrect. As noted in the fifth paragraph of *Avian Fatality Analysis Methods* on page 3.4-52 of the Draft PEIR, the rates in the PEIR exclude the Diablo Winds and Buena Vista turbine rates.

Response to Comment GP-4-58

Comment noted. As soon as new data on adjusted bat fatality rates are available for year 2 of the Vasco Winds project, those data will be incorporated into management decisions by the County, as guided by the TAC. Mitigation Measures BIO-14a on page 3.4-127 and BIO-14b on pages 3.4-127 through 3.4-129 of the Draft PEIR have been revised as shown in Master Response 11, *Bat Impacts and Mitigation*.

E.7 EBZA Meeting

During an EBZA workshop and public hearing held on June 26, 2014, the public and board members commented on the projects and on the Draft PEIR. In some cases the commenter also submitted a comment letter covering the same issues as presented in their verbal comments; in such cases, the written comment and response is referenced here. Some comments were made by EBZA members during the workshop portion of the hearing; the remainder arose during the public comment portion. The comments are summarized and responses to those comments are presented below.

E.7.1 Commenter PH-1—Larry Gosselin, EBZA Board Member

Comment PH-1-1

The PEIR does not evaluate impacts on grazing, which would be economic and not only physical. For example, availability of money from wind leases could reduce the need for grazing income. Reduced grazing could affect supporting economic activities, such as supplies for ranch equipment. Should this analysis be added to the Final PEIR?

Response to Comment PH-1-1

The PEIR does address impacts of the proposed program and projects on agriculture in Section 3.2-7. However, the PEIR, as directed by CEQA Guidelines Section 15131, focuses on physical impacts, and would address economic effects to the extent that such effects could be shown to result in a physical impact. The PEIR presents information on existing grazing activity in the program area, but the impacts analysis, pursuant to CEQA Guidelines Appendix G, focuses on effects on prime farmland. Grazing activity would not be substantially physically affected by the proposed program and projects, as grazing can occur in conjunction with wind energy generation. An analysis of the extent to which the availability of income from wind energy generation leases would reduce incentives to continue grazing activity would be speculative for CEQA purposes; therefore, pursuant to CEQA Guidelines Section 15145, this issue has not been addressed in the PEIR.

Comment PH-1-2

Solar panels at turbine bases might be more effective than gravel as a deterrent for ground squirrel activity and would generate more “green” energy. Should this be added as a mitigation measure?

Response to Comment PH-1-2

This suggestion has been considered and may be suggested in the future to future applicants.

Comment PH-1-3

Other wind resource areas use radar and braking systems for target (e.g., raptor) detection and individual turbine curtailment. Should that approach be considered as a mitigation option in the APWRA?

Response to Comment PH-1-3

Real-time turbine curtailment is addressed in Master Response 10, *Adaptive Management*.

Comment PH-1-4

What are the future effects of leaving turbine infrastructure (i.e., foundations) buried onsite?

Response to Comment to PH-1-4

Resource agencies have in many cases requested that turbine foundation not be removed to minimize habitat disturbance during decommissioning. As noted on page 2-11 of the PEIR, during site reclamation, "Some facilities (e.g. roadways, turbine footings) may be left in place if doing so is deemed to be more protective of natural resources than removal."

E.7.2 Commenter PH-2—Jon Harvey, EBZA Chair

Comment PH-2-1

The commenter had questions regarding make-up of the TAC and how that would be decided. Some of these questions were addressed at the meeting by County staff.

Response to Comment PH-2-1

The make-up and responsibilities of the TAC are addressed in Master Responses 5, *Avian Fatality Monitoring Methodology*, and 6, *Technical Advisory Committee.*

E.7.3 Commenter PH-3—Juan Pablo Gallan, Save Mount Diablo

A comment letter was submitted by this commenter (Comment Letter NGO-2). Where verbal comments were made in writing as well, the responses are identified by written comment number.

Comment PH-3-1

Will micro-siting of turbines be conducted for the Patterson Pass Project as well as for the Golden Hills Project?

Response to Comment PH-3-1

Siting of turbines for the Patterson Pass Project has already been conducted. Mitigation Measure BIO-11b sets forth the parameters of turbine siting.

Comment PH-3-2

Will any projects beyond those listed in Table 2-6 be tiered from the PEIR?

Response to Comment PH-3-2

Yes. Table 2-6 in the PEIR lists those projects of which the County is currently aware as projects that are or may be proposed. Other projects may be initiated within the parameters established subsequent to certification of the PEIR.

Comment PH-3-3

Will the golden eagle population be sustainable at the anticipated levels of mortality that would result from repowering?

Response to Comment PH-3-3

As shown in Response to Comment FA-1-9, the golden eagle population is considered to be stable but with reduced resilience as a consequence of turbine-related mortality. The mortality rates estimated to result from the two program alternatives—46% and 50%, respectively, for Alternatives 1 and 2—are anticipated to improve the population's resiliency overall. For a detailed discussion of golden eagle fatality estimates and the implications for the regional population, please refer to Response to Comment FA-1-6.

Comment PH-3-4

Are the compensatory mitigation measures to address loss of raptors prioritized in any way?

Response to Comment PH-3-4

Please see Response to Comment NGO-2-3, from this commenter, expressing the same comment.

E.7.4 Commenter PH-4—Bob Cooper, Dyer Road Resident

A comment letter was submitted by this commenter (Letter GP-1). Where verbal comments were made in writing as well, the responses are identified by written comment number. Please refer to that letter and the responses for a more detailed examination of the comments presented here.

Comment PH-4-1

The commenter expressed support for repowering and pointed out concerns including inadequate setbacks of existing turbines, potential for blade throw hazard, and risk of project-related wildlife fatalities.

Response to Comment PH-4-1

The commenter's support for the APWRA repowering and his concerns regarding potential impacts are acknowledged. The impacts have been addressed in the PEIR.

Comment PH-4-2

Figure 2-1 in the PEIR is missing several residences and a string of existing turbines.

Response to Comment PH-4-2

Please see Response to Comment GP-1-4. The figure has been revised for the Final PEIR.

E.7.5 Commenter PH-5—Karen Sweet, North Flynn Road Resident

Comment PH-5-1

The commenter expressed general support for repowering, citing reduced fire hazard associated with new-generation turbines.

Response to Comment PH-5-1

The commenter's support for repowering is acknowledged.

Comment PH-5-2

The commenter expressed a concern about possible traffic impacts that could interfere with commute and school traffic.

Response to Comment PH-5-2

As disclosed in Section 3.15, *Transportation/Traffic*, Mitigation Measure TRA-1 specifies development and implementation of a construction traffic control plan, which would reduce such potential impacts to a less-than-significant level.

Comment PH-5-3

The commenter expressed a hope that grassland reseeding would be undertaken in consultation with a rangeland specialist and that emphasis would be placed on plants appropriate to support grazing rather than experimental efforts involving native perennials.

Response to Comment PH-5-3

As set forth in Mitigation Measure BIO-5c, a Grassland Restoration Plan will be developed to address ground disturbance on a project-specific basis. Preparation of this plan will be undertaken by a qualified biologist in coordination with CDFW and subject to CDFW approval.

Comment PH-5-4

The commenter expressed the hope that conservation planning would consider the agricultural economy, the cattle industry, and local landowners in developing conservation easements and other planning decisions.

Response to Comment PH-5-4

The mitigation measures focus on the amount of compensation. More detail about the implementation of conservation planning will be developed over time.

E.8 References Cited

E.8.1 Printed References

Brown, K., K. S. Smallwood, and B. Karas. 2013. *Vasco Avian and Bat Monitoring Project 2012–2013 Annual Report*. Final. September. Prepared by Ventus Environmental Solutions, Portland, OR. Prepared for NextEra Energy Resources, Livermore, CA.

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Weller, T. J., and J. A. Baldwin, 2011. Using Echolocation Monitoring to Model Bat Occupancy and Inform Mitigations at Wind Energy Facilities. *The Journal of Wildlife Management* 9999:1–13; 2011; DOI: 10.1002/jwmg.260.

E.8.2 Personal Communications

Payne, Bill. Manager, Aviation Management, California Department of Forestry and Fire Protection. September 23, 2014—telephone conversation with Andrew Young, Alameda County Planning Department.