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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

SEP 13 2010

Mr. Greg Thomsen
Bureau of Land Management
California Desert District Office
22835 Calle San Juan de los Largos
Moreno Valley, CA 92553

Subject: Final Environmental Impact Statement and California Desert Conservation Area Plan Amendment for the Proposed Chevron Energy Solutions Lucerne Valley Solar Project, San Bernardino County, California [CEQ# 20100033]

Dear Mr. Thomsen,

The U.S. Environmental Protection Agency (EPA) has reviewed the Final Environmental Impact Statement (FEIS) and California Desert Conservation Area Plan Amendment (CDCAPA) for the Proposed Chevron Energy Solutions Lucerne Valley Solar Project (Project). Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act (CAA).

EPA reviewed the Draft Environmental Impact Statement (DEIS) and CDCAPA on May 20th, 2010. We rated the DEIS as *Environmental Concerns – Insufficient Information* (EC-2), primarily due to a lack of information regarding site hydrology, concerns regarding possible impacts to water resources, impacts to biological resources and special status species, and the scope of the EIS's cumulative impacts analysis. In addition, noting that the DEIS indicated that transmission line reconductoring might be necessary in order for the project to reach maximum output, EPA advised that any transmission line upgrades required for the project would be considered similar and connected actions and should be analyzed in the EIS as project components.

We appreciate the efforts of BLM, the applicant, and its consultants to discuss and respond to our DEIS comments, and we commend the applicant, State, and federal agencies for working together to develop alternatives and mitigations that support environmentally preferable outcomes. In particular, we are pleased to see that the FEIS indicates that compensatory mitigation for desert tortoises will be made at a 2:1 ratio per Department of Fish and Game regulation. EPA is also pleased to see that the BLM Preferred Alternative identified in the FEIS does not require the modification of the site's natural drainage in order to provide water to the

vegetated screen area as is proposed in Alternative 4. EPA supports the maintenance of natural site drainage where ever feasible.

We note that BLM has completed and incorporated a hydrology study for the project as an appendix to the FEIS. This analysis provides answers to many of EPA's questions and concerns regarding site hydrology and possible hydrologic impacts of the proposed action. We commend BLM for its efforts to reduce the impacts that the proposed project may have on site hydrology and hydrologic function; however, we request additional information regarding one related measure. The FEIS states that the fencing to be installed around the perimeter of the proposed project site would be designed such that it would wash away in severe storm events and require replacement. The ROD and response to comments on the FEIS should provide additional details regarding the design of perimeter fence; in particular, a discussion of the magnitude of storm event that would be expected to cause the fence, or segments of it, to wash away, and the potential for adverse impacts resulting from damaged or dislodged fence segments.

In response to EPA's comments, the FEIS states that no upgrades to transmission or distribution lines would be required and that the proposed project, "if approved, would be limited to the capacity available on the local distribution line" (p. N-60). Despite this assertion, the FEIS also states that, although it is assumed that "reconductoring" of the existing transmission lines would require no disturbance, "if additional transmission facilities are required, separate environmental review for those facilities would be conducted." (p. 2-13) As stated in our comments on the DEIS, should additional transmission upgrades be required in order to support the full generative capacity of the proposed project, those upgrades would, under the National Environmental Policy Act, be considered similar and connected actions to the proposed project and should be analyzed in conjunction with the proposed project in an EIS. Unless BLM intends to revise or supplement the EIS to disclose and evaluate the environmental impacts of upgrading or constructing additional transmission facilities, we recommend that the Record of Decision (ROD) specifically limit the proposed project to the capacity available on the existing 33-kV transmission line.

In addition, EPA remains concerned with the permanent loss of 18 acres of desert wash communities and the long term impacts this loss may have on habitat productivity and function on the site and surrounding areas. We recommend that further consideration be given to options for avoiding or reducing impacts to these sensitive communities. Furthermore, the potential danger posed by flash flooding at the site is not covered in much detail in the FEIS. We understand that study is ongoing regarding this subject and we recommend that the results of that study be included in the response to comments on the FEIS and in the ROD. Lastly, we understand that consultation with the US Army Corps of Engineers regarding the identification and delineation of any Waters of the U.S. on the project site is ongoing. EPA recommends that the results of that consultation also be included in the response to comments and the ROD.

We are available to discuss all recommendations provided. Please send two hard copies and one CD ROM copy of the ROD to us when it is filed with our Washington D.C. office. If you have any questions, please contact me at 415-972-3521, or contact Carter Jessop, the lead reviewer for this Project. Carter can be reached at 415-972-3815 or jessop.carter@epa.gov.

Sincerely,

Kathleen M. Goforth, Manager
Environmental Review Office (CED-2)

Enclosures: EPA Detailed Comments

Cc: Jim Abbott, Bureau of Land Management, California State Office
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September 13, 2010

VIA EMAIL AND OVERNIGHT MAIL

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Email: LucerneSolar@blm.gov

Re: Comments on the Final Environmental Impact Statement for the Chevron Energy Solutions Lucerne Valley Solar Project

Dear Mr. Thomsen:

We submit these Comments on the Final Environmental Impact Statement ("FEIS") prepared for Chevron Energy Solutions' ("Applicant") Lucerne Valley Solar Project and the proposed amendment to the California Desert Conservation Area Plan Amendment (collectively "Project") on behalf of the International Brotherhood of Electrical Workers, Local 477 ("Local 477"). As explained more fully below, the FEIS does not comply with the requirements of the National Environmental Policy Act ("NEPA"), and approval of the Project would violate the Federal Land Policy Management Act ("FLPMA"). The Bureau of Land Management ("BLM") may not approve the Project until it has complied with all relevant law, and evaluated the Project's impacts in a supplemental EIS, as required by NEPA.

The members of Local 477 build, maintain and operate conventional and renewable energy power plants in San Bernardino County. Individual members of Local 477 work in areas affected by environmental degradation and public health and safety risks from industrial development. Members also live in and use areas that will suffer the impacts of projects related to power plant development, including noise and visual intrusion, water and soil pollution, and destruction of archaeological or wildlife areas. Environmental degradation jeopardizes future jobs by causing construction moratoriums, eliminating protected species and habitat, using limited fresh water and putting added stresses on the environmental carrying

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capacity of the State. This reduces future employment opportunities. In contrast, well designed projects that reduce environmental impacts of electrical generation improve long-term economic prospects.

I. INTRODUCTION

NEPA vests each federal agency with the "responsibility and power to protect the environment and integrate environmental, social, and economic objectives when carrying out other federal agency functions."[1] Each federal agency is directed to "interpret the provisions of the Act as a supplement to its existing authority and as a mandate to view traditional policies and missions in the light of the Act's national environmental objectives."[2] Consistent with NEPA's mandate, the California Desert Conservation Area Plan ("CDCA Plan") requires BLM to analyze the environmental effects and the economic and social impacts of granting and/or implementing an applicant's request to amend the CDCA Plan to accommodate a specific proposed purpose.[3] BLM's rationale shall be based on "the principles of multiple use, sustained yield, and maintenance of environmental quality."[4]

We have reviewed the FEIS and its technical appendices. As our comments below illustrate, the BLM has failed to comply with its responsibility under NEPA to protect the environment when proposing to carry out the Project. Because the BLM has made substantial changes in the Project and there is new information relevant to environmental concerns, the BLM must prepare a supplemental EIS. A supplemental EIS is not only required under NEPA, but will enable the BLM to strike a controlled balance between the proposed Project and protection of public lands as specified in the CDCA Plan's prescribed management goals for Multiple Use Class M (moderate use) lands prepared under FLPMA.

These comments were prepared with the technical assistance of Chris Campbell, M.S. and James W. Cornett, M.S. The comments and qualifications of Mr. Campbell and Mr. Cornett are attached hereto as Attachments A and B,

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[1] RONALD E. BASS ET AL., THE NEPA BOOK: A STEP-BY-STEP GUIDE ON HOW TO COMPLY WITH THE NATIONAL ENVIRONMENTAL POLICY ACT 2 (2d ed. 2001).
[2] 40 C.F.R. § 1500.6.
[3] BUREAU OF LAND MGMT., U.S. DEPT. OF THE INTERIOR, THE CAL. DESERT CONSERVATION AREA PLAN 1980 AS AMENDED 121 (1999) [hereinafter CDCA PLAN].
[4] CDCA PLAN, p. 121.

respectively. We request that you consider and respond to these experts' comments separately and individually.

II. BLM MUST PREPARE A SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

"An agency's NEPA responsibilities do not end with the initial assessment; supplemental documentation 'is at times necessary to satisfy the Act's action-forcing purposes.'"[5] As stated by the United States Supreme Court in *Marsh v. Oregon Natural Resources Defense Council*:

> It would be incongruous . . . with the Act's manifest concern with preventing uninformed action, for the blinders to adverse environmental effects, once unequivocally removed, to be restored prior to the completion of agency action simply because the relevant proposal has received initial approval.[6]

A supplemental EIS ***must*** be prepared if the agency makes "substantial changes in the proposed action that are relevant to environmental concerns" or if "there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."[7] "This is a low standard."[8] A plaintiff need only raise a "substantial question regarding whether a project may have a significant effect."[9] If a modification of the planned action affects environmental concerns in a manner differently than previously analyzed, the change is surely "relevant" to those same concerns.[10]

Here, the BLM must supplement the EIS for two reasons. First, it has proposed substantial changes in the Project design and additional mitigation measures that may result in different potentially significant environmental effects. There is also significant new information relevant to environmental concerns.

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[5] Price Roads Neighborhood Ass'n, Inc. v. U.S. Dept. of Transp., 113 F.3d 1505, 1509.
[6] Marsh v. Or. Natural Res. Def. Council, 490 U.S. 360, 371 (1989).
[7] 40 C.F.R. § 1502.9(c)(1).
[8] Klamath Siskiyou Wildlands Ctr. v. Boody, 468 F.3d 549, 569 (9th Cir. 2006).
[9] *Id.*; *see also Price Roads Neighborhood Ass'n*, 113 F.3d at 1509 ("supplemental documentation is only required when the environmental impacts reach a certain threshold-i.e. significant (defined at 40 C.F.R. § 1508.27) or uncertain").
[10] New Mexico ex rel. Richardson v. Bureau of Land Mgmt., 565 F.3d 683, 707 (10th Cir. 2009).

Preparation of a supplemental EIS is, therefore, required before the BLM may approve the Project.

A. BLM must supplement the EIS because it has proposed substantial changes in the Project design that may result in different potentially significant adverse environmental effects

"Substantial changes" in the proposed action may include changes in the design, location, or timing of a proposed action that are relevant to environmental concerns.[11] Here, the BLM modified elements of the Project in the FEIS without acknowledging that the changes may result in new, potentially significant environmental effects. Specifically, after the DEIS was released, the Applicant and the BLM modified the originally proposed Project to:

1. Make the size, location and design of Phase II contingent upon available transmission capacity; and

2. Remove all vegetation on the Project site and rough grade.

These substantial modifications in the proposed Project change the basic assumptions regarding the Project's impacts on the environment. The Project will result in new, potentially significant effects to desert hydrology, soil, air quality and biological resources that were not analyzed in the DEIS or FEIS, and have never before been considered for this area under the CDCA. Because core elements of the Project could not be ascertained in the DEIS and FEIS, the public has been deprived of a meaningful opportunity to review and comment on this proposal.

1. The BLM's modification to make the size, location and design of Phase II contingent on available transmission capacity may result in significant environmental effects

The BLM modified the Project description to make the size, location and design of Phase II contingent upon available transmission capacity.[12] The FEIS

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[11] BUREAU OF LAND MGMT., PUBL'N NO. H-1790-1, NAT'L ENVIRONMENTAL POLICY ACT HANDBOOK 29 (2008) [hereinafter NEPA HANDBOOK].

[12] BUREAU OF LAND MGMT., FINAL ENVIRONMENTAL IMPACT STATEMENT & PROPOSED CAL. DESERT CONSERVATION AREA PLAN AMENDMENT FOR THE PROPOSED CHEVRON ENERGY SOLUTIONS LUCERNE VALLEY SOLAR PROJECT ES-4, 1-1, 1-5, 2-5, 2-13, 2-25 (Aug. 2010) [hereinafter FEIS].

acknowledges that separate environmental review would be conducted, ***but only if*** additional transmission facilities are required.[13] A potential reduction in Project size and the promise of future environmental review does not remove the BLM's duty to supplement this EIS to analyze all of the Project's environmental concerns.[14] There is no evidence that the DEIS or FEIS analyzed the environmental consequences of Phase II's size, location and design. As discussed below, the environmental consequences of Phase II's size, location and design may be significant. The BLM must supplement the EIS when it modifies the configuration of activities, which gives rise to different, potentially significant impacts.[15]

Depending on the final size, location and design of Phase II, the Project could cause various environmental impacts to resources such as water resources/ hydrology, biological resources, visual resources and soils. For example, Phase II is proposed to be constructed both east and immediately west of Santa Fe Fire Road.[16] According to the Hydrology Study, the most-densely vegetated portions of the site are located east of Santa Fe Fire Road and the area within a quarter of mile to the west of Santa Fe Fire Road.[17] In addition, the braided pattern on the surface of this portion of the Project site indicates that flow patterns are unstable and this area is active.[18] Depending on the final size, location and design, development of Phase II could impact the vegetation, flow patterns and soil differently.

A complete and consistent description of the entire Project is necessary for the public and decision makers to understand the effects of the Proposed Action and its alternatives.[19] Courts have held that "[w]here the information in the initial EIS was so incomplete or misleading that the descisionmaker and the public could not make an informed comparison of the alternatives, revision of an EIS [was] necessary to provide a reasonable, good faith, and objective presentation of the

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[13] *Id.* at 2-13.
[14] *New Mexico*, 565 F.3d at 706.
[15] *Id.* at 706-07; *see also* Dubois v. U.S. Dep't of Agric., 102 F.3d 1273, 1291-92 (1st Cir. 1996).
[16] FEIS, p. 2-5.
[17] WESTWOOD PROF'L SERV., INC., HYDROLOGY STUDY LUCERNE SOLAR PROJECT 7 (July 2010) [hereinafter HYDROLOGY STUDY].
[18] HYDROLOGY STUDY, p. 7.
[19] *See* 40 C.F.R. § 1502.15; *see also* Laguna Greenbelt v. U.S. Dep't of Transp., 42 F.3d 517, 528-29 (9th Cir. 1994) (reviewing plaintiff's claim that inconsistent definition resulted in misleading analysis of project's positive and negative effects).

subjects required by NEPA."[20] Here, the BLM is required to supplement the EIS to include a complete description of the Project that analyzes potential environmental concerns this modification raises.

2. New potentially significant impacts to soil and water

The Applicant concluded that cutting vegetation at 4-inches above the ground, as described in the DEIS, would not be practical for construction.[21] The BLM, therefore, disclosed that vegetation would be removed, and the entire site would be rough graded.[22] However, information in the FEIS does not clearly demonstrate whether the BLM took this modification into account in assessing the Project's impacts to soil and water. The BLM must supplement the EIS because vegetation removal and rough grading of the entire Project site may have new, potentially significant impacts to soil and water.

For example, vegetation intercepts rainfall, storing some of it on its surface area, as well as dissipating the energy of the rain before it impacts the ground. Removing all vegetation from the Project site can enhance soil erosion by reducing these interception losses.[23] In addition, scarifying the entire Project site destroys the desert pavement and exposes fine sediments. Increases in soil loss from soil array fields could result in excess sedimentation to the active washes that traverse the Project site and/or deposition within the solar array field.[24] If this occurs, significant impacts to cryptobiotic crusts could occur beyond those associated with the process of vegetation removal and scarifying.[25]

These potential impacts are not discussed or mitigated in the DEIS or FEIS. In fact, it is not clear whether the FEIS and its supporting documents even consider this modification. While the Biological Resources section of the FEIS clearly states that vegetation removal would "bare" the area under the solar arrays,[26] it is not

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[20] Natural Res. Def. Council v. U.S. Forest Serv., 421 F.3d 797, 811 (9th Cir. 2005) (citing Animal Def. Council v. Hodel, 840 F.2d 1432, 1439 (9th Cir. 1988)).
[21] Letter from Raphael Varieras, Project Dev. Manager, Chevron Energy Solutions, to Greg Thomsen, Bureau of Land Mgmt. (May 19, 2010).
[22] BLM Responses to Comments, 069.
[23] Memorandum from Chris Campbell, cbec eco engineering to Robyn C. Purchia, Attorney, Adams Broadwell Joseph & Cardozo 2 (Sep. 9, 2010) (see Attachment A) [hereinafter Campbell comments].
[24] *Id.*
[25] *Id.*
[26] FEIS, pp. 4.6-3, 4.6-7, 4.6-14.

clear in the Water Resources/Hydrology and Soil Sections whether vegetation would be completely removed under the solar arrays.[27] The Hydrology Study and Storm Water Pollution Prevention Plan ("SWPPP") also analyze the Project's impacts with the existing vegetation remaining in place.[28]

The BLM must clearly analyze the Project's new, potentially significant effects to soil and water in a supplemental EIS. A revised analysis would include specific information about potentially unmitigated erosion due to loss of onsite vegetation and increased grading. It would also include an analysis of increased and unmitigated transport of soils and sediment to the washes and streams in and around the Project site as a result of vegetation loss and grading.

3. New, potentially significant impacts to air quality

As discussed above, the Applicant has modified the Project design to include the removal of all vegetation on the Project site and rough grading. In addition to causing new potentially significant impacts to soil and water, removal of vegetation and increased rough grading would impact the carbon storage capacity of the Project site. As the DEIS and FEIS recognize, desert soils have a carbon storage capacity.[29] The loss of carbon storage capacity was not modified in the FEIS.[30] The BLM must analyze this potentially new, significant environmental effect.

B. BLM must supplement the EIS because it has proposed additional mitigation measures for desert tortoises that may result in potentially significant environmental effects

New mitigation measures trigger the need for a supplemental EIS when they may result in significant environmental effects. NEPA requires agencies to analyze all significant environmental effects, not merely adverse ones.[31] The proper question is not the intent behind the action, but the significance of the

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[27] *See id.* at 4.4-2, 4.5-2, 4.5-3.
[28] WESTWOOD PROF'L SERV., INC., STORM WATER POLLUTION PREVENTION PLAN 18 (May 2010); HYDROLOGY STUDY 3, 12.
[29] BUREAU OF LAND MGMT., DRAFT ENVIRONMENTAL IMPACT STATEMENT & PROPOSED CAL. DESERT CONSERVATION AREA PLAN AMENDMENT FOR THE PROPOSED CHEVRON ENERGY SOLUTIONS LUCERNE VALLEY SOLAR PROJECT ES-6, 4.1-12, 4.1-20 (Jan. 2010) [hereinafter DEIS]; FEIS, pp. 4.1-12, 4.1-20.
[30] *Compare* DEIS, pp. ES-6, 4.1-12, 4.1-20, *with* FEIS, pp. 4.1-12, 4.1-20.
[31] Nat'l Wildlife Fed'n v. Marsh, 721 F.2d 767, 783 (11th Cir. 1983).

environmental impact resulting from the action.[32] Although the BLM and the United States Fish & Wildlife Service ("USFWS") may have intended to reduce impacts to desert tortoises, the Biological Opinion, nevertheless, raises the possibility of significant environmental effects that were not analyzed in the DEIS or FEIS.

The Biological Opinion attempts to mitigate impacts to desert tortoises through implementation of the following mitigation measures:

1. The Applicant will smooth out ephemeral drainages and create swales that will allow the movement of water to cross the site and allow sheet drainage at the far north end of the site;

2. Construction of a tortoise-proof fence that will be placed so that occupied tortoise burrows are located outside of the Project area;

3. Preconstruction tortoise clearance surveys;

4. Relocation of desert tortoises to a "safe location" outside the Project area; and

5. Development of a site-specific management plan with the goal of ensuring that the Project does not attract common ravens.

These impacts can have various significant environmental effects that were not discussed or mitigated in the DEIS or FEIS.[33] For example, water carried off the Project site by newly created swales will collect someplace. There is no description in the DEIS or FEIS about where this water will collect (i.e. catch bin or natural water source). Sediment runoff associated with newly created swales that is collected in a natural water source could have significant environmental effects.

The BLM must prepare a supplemental EIS because additional mitigation measures in the Biological Opinion may cause significant environmental effects.

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[32] *Id.*

[33] *See* Letter from James W. Cornett, Ecological Consultants, to Robyn C. Purchia, Attorney, Adams Broadwell Joseph & Cardozo 2-3 (Sep. 10, 2010) (Attachment B) [hereinafter Cornett comments].

C. BLM must supplement the EIS because there is new information that the Project may have additional potentially significant adverse environmental effects

The DEIS did not propose any specific mitigation measures for loss of golden eagle foraging habitat because the species was not observed.[34] After publication of the DEIS, however, Chambers Group conducted an Eagle Survey, which identified three active nest sites, the closest of which is 5.5 miles south of the Project site.[35] The FEIS recognized that the Proposed Action is a reasonable foraging distance from these active territories, but it did not proposed any specific mitigation measures because "losing foraging habitat of the size of the Proposed Action (516 acres) would account for a small portion of their hunting range (approximately 5 percent) and would not be considered large enough to affect the breeding success of these eagles."[36] However, new information contained in the Eagle Survey clearly indicates that the Project will impact golden eagle foraging habitat. Those impacts remain significant and unmitigated.

According to Jim Cornett, the distance between the observed active nests and the Project site "are so minimal for such a strong-flying bird" that more than just the eagles from the three observed nests can be expected to forage over the Project site.[37] Estimates of at least 100 square miles of foraging territory for golden eagles in desert environments have been made.[38] Therefore, implementation of the proposed Project would have potentially significant environmental effects on many golden eagles.

In addition, even a loss of 5 percent of foraging habitat for one or more golden eagles could be disastrous for the species in the immediate region.[39] The FEIS did not consider that the Project site could also result in habitat decline for golden eagle prey, which could, in turn, result in population declines in essential food resources.[40] The BLM must consider this potentially significant impact in a supplemental EIS.

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[34] *See* DEIS, pp. 3.6-22, 4.6-12.
[35] Letter from Paul Morrisey, Biologist, Chambers Group, Inc., to Ram Ambatipudi, Sr. Business Dev. Manager, Chevron Energy Solutions (July 7, 2010) (Appendix L to FEIS).
[36] FEIS, p. 4.6-22.
[37] Cornett Comments, p. 1.
[38] *Id.* at 2.
[39] *Id.*
[40] *Id.*

III. BLM FAILED TO TAKE A "HARD LOOK" AT THE PROJECT'S ENVIRONMETNAL CONSEQUENCES

Section 101 of NEPA declares it is a matter of national policy to preserve important historic, cultural and natural aspects of our national heritage. To achieve this goal, NEPA requires that agencies take a "hard look" at the environmental consequences of a proposed action.[41] A hard look is defined as a "reasoned analysis containing quantitative or detailed qualitative information."[42] The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of the impact caused by the proposed action and the alternatives.[43] An EIS must provide a "full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." "General statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided."[44] "***[L]ack of knowledge does not excuse the preparation of an EIS; rather it requires the [agency] to do the necessary work to obtain it***."[45]

An EIS must provide a full and fair discussion of every significant impact, as well as inform decision makers and the public of reasonable alternatives which would avoid or minimize adverse impacts. The impacts analysis must include a discussion of the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented.[46] The discussion of impacts must include both "direct and indirect effects (secondary impacts) of a proposed project."[47]

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[41] Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989); *Dubois*, 102 F.3d at 1284 (1st Cir. 1996); *see also* S. Fork Band Council of W. Shoshone of Nev. v. U.S. Dep't of the Interior, 588 F.3d 718, 727 (9th Cir. 2009).
[42] NEPA HANDBOOK, p. 55.
[43] *Id*.
[44] Neighbors of Cuddy Mountain v. U.S. Forest Serv., 137 F.3d 1372, 1380 (9th Cir. 1998).
[45] Nat'l Parks & Conservation Ass'n v. Babbitt, 241 F.3d 722, 733 (9th Cir. 2001), *abrogated on other grounds*, Monsanto Co. v. Geertson Seed Farms, 130 S.Ct. 2743 (2010) (emphasis added).
[46] 40 C.F.R. § 1502.16.
[47] 40 C.F.R. § 1502.16(a), (b); *see also* Sierra Club v. Marsh, 976 F.2d 763, 767 (1st Cir. 1992).

The BLM failed to take a "hard look" at the Project's impacts to visual resources and water resources. The BLM must include a hard look at all of the Project's impacts in a supplemental EIS.

A. The BLM failed to take a "hard look" at the Project's impacts to visual resources

The BLM recommended that the Project area receive an Interim Visual Resource Management ("VRM") Class IV designation, which identifies the site as having the lowest visual resource value.[48] The interim VRM Class IV objective is to "provide for management activities that allow major modification of the existing landscape. The level of change to the characteristic landscape can be high."[49] Based on this objective, the FEIS found that the Project's long-term impact to visual resources will not be considered significant.[50]

The FEIS lacks the level of detailed analysis, however, to support the BLM's conclusion that the Project area should be designated as VRM Class IV. Specifically, there is no indication in the DEIS or FEIS that the BLM considered State Route ("SR") 247, a County-designated and State-eligible scenic highway, and the strong public interest in maintaining the visual integrity of the area. The BLM must consider these factors in assigning a VRM Class to the Project site.

The Project site is visible from SR 247 at less than a quarter mile away.[51] SR 247 is designated as a scenic route by the San Bernardino County General Plan and is subject to the provisions of the Open Space Overlay.[52] The County's designation recognizes the value of protecting SR 247 and the surrounding land as a scenic resource for future generations.[53] Additionally, the County's designation makes SR 247 eligible for designation as a State Scenic Highway.[54] To nominate SR 247 for official State Scenic Highway status, the County is required to identify scenic attributes and visual intrusions, as viewed from the highway, and describe how

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[48] FEIS, p. 3.12-14.
[49] *Id*. at 4.12-10 (citing BLM, Visual Resource Management Manual 8400, 1986).
[50] *Id*.
[51] *Id*.
[52] COUNTY OF SAN BERNARDINO, GENERAL PLAN, LUCERNE VALLEY CMTY. PLAN 32 (Feb. 2007).
[53] *Id*.
[54] *See* CAL. STS. & HIGH. CODE § 261.

those characteristics would contribute or detract from the overall visual quality of the corridor.[55]

Developing the Project less than a quarter of a mile away from SR 247 would surely constitute a "visual intrusion," which would detract, rather than contribute to, the overall visual quality of the corridor. Detracting from the visual quality of SR 247 may impact the highway's designation by the County and eligibility for designation by the State. The BLM must consider the Project's impacts to this "special area" when determining the visual sensitivity level of the Project site.

In addition, there is a strong public interest in maintaining the visual integrity of the area. The BLM received numerous comments during the scoping period from local residents who noted that they "enjoy the view" and "visual impact[s] count," and that the Project would constitute an "eye sore."[56] The BLM is required to consider the strong public interest in maintaining a rural landscape when determining the visual sensitivity level of the Project site.

The BLM must consider the Project's impacts to SR 247 and the strong public interest in maintaining visual resources around the Project site. The Interim VRM Class IV designation is not based on an adequate consideration of these factors, and improperly results in the BLM finding a less-than-significant impact to a visually sensitive area. The BLM must take a hard look at the Project's impacts to visual resources with these considerations in mind, but did not.

B. BLM failed to take a "hard look" at the Project's impacts to desert washes

The Water Resources/Hydrology Section of the DEIS and FEIS failed to take a hard look at significant effects on desert wash morphology.[57] We incorporate by reference Local 477's comments on the DEIS. The following comments address information that has been generated following the issuance of the FEIS.

Chris Campbell, an expert in hydrology, reviewed the Hydrology Study released in July 2010 and the FEIS. In his opinion, construction of the tortoise

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[55] Cal. Dep't of Transp., Scenic Highway Guidelines, p. 3, *available at* http://www.dot.ca.gov/hq/LandArch/scenic/guidelines/scenic_hwy_guidelines.pdf.
[56] *See* BUREAU OF LAND MGMT., PUBLIC SCOPING SUMMARY REPORT 12, 18 (Oct. 2009).
[57] Campbell comments, p. 2.

exclusion fence, three check dams and solar arrays, as well as the use of compacted aggregate for the Arizona crossings, may have a significant impact to active washes.[58] Specifically, construction of the fence and three check dams would cause sediments to accumulate, which could lead to both onsite and offsite degradation or incision of the washes.[59] The solar arrays could redirect and/or impede flood waters, which could enhance lateral migration and alter wash morphology.[60] The use of compacted coarse aggregate for the Arizona crossings could result in hardened sills acting as grade control, which would impact wash morphology.[61] None of these significant effects were discussed or mitigated in the FEIS.

The FEIS's lack of an analysis of these potential impacts demonstrates that the BLM failed to take a hard look at impacts to desert washes within the Project site, as required by NEPA.

IV. THE BLM FAILED TO RESPOND TO PUBLIC AND AGENCY COMMENTS ADEQUATELY

NEPA's procedural requirements "are to be strictly interpreted to the fullest extent possible in accord with the policies embodied in the Act. . . . [g]rudging, pro forma compliance will not do."[62] "NEPA's public comment procedures are at the heart of the NEPA review process."[63] Responsible opposing viewpoints must be included in the final EIS to reflect "the paramount Congressional desire to internalize opposing viewpoints into the decision-making process to ensure that an agency is cognizant of all the environmental trade-offs that are implicit in a decision."[64] In responding to public comments on a DEIS, agencies are "obliged to provide a 'meaningful reference' to all responsible opposing viewpoints concerning the agency's proposed decision."[65] In addition, "there must be a good faith, reasoned analysis in response."[66]

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[58] *Id.*
[59] *Id.*
[60] *Id.*
[61] *Id.*
[62] State of Cal. v. Block, 690 F.2d 753, 769 (9th Cir. 1982) (internal citation omitted).
[63] *Id.* at 770.
[64] *Id.* at 771.
[65] *Id.* at 773.
[66] *Id.*

Agencies are held to a more stringent standard with regard to responses to comments submitted by expert federal agencies. Specifically, courts have ***required*** the agency to respond to such comments and to "discuss at appropriate points in the final statement any responsible opposing view which was not adequately discussed in the draft statement and shall indicate the agency's response to the issues raised."[67] "This disclosure requirement obligates the agency to make available to the public high quality information, including accurate scientific analysis, expert agency comments and public scrutiny, before decisions are made and actions are taken."[68]

Here, BLM failed to provide a good faith, reasoned analysis in response to public comments, and also failed to respond to comments submitted by the U.S. Environmental Protect Agency ("EPA"). These omissions violate NEPA.

1. BLM failed to provide a good faith, reasoned response to public comments regarding the Project's estimated water demand and supply

Because of the shortage of water in California and the intense competition for beneficial use of this limited resource, it is essential for federal, State and local agencies to assess a proposed project's water demand and supply in their environmental review documents. Recurring droughts and water shortages in California have resulted in significant economic and environmental consequences.[69] "In addition to the potential for drought-related shortages, increasing environmental concerns, including water quality, salt water intrusion and the needs of water-dependent wild life have begun to compete with municipal, industrial and agricultural uses for water supplies."[70] Requirements for in-stream uses have further limited supplies available to water agencies to augment existing supplies.[71] Limited opportunities to augment water supplies make conservation of existing supplies critical.[72] Accordingly, the source and availability of water supply is a

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[67] Ctr. Biological Diversity v. U.S. Forest Serv., 349 F.3d 1157, 1167 (citing 40 C.F.R. § 1502.9(b)).
[68] *Id*. at 1167 (citing 40 C.F.R. § 1500.1(b)).
[69] Press Release, Office of the Governor, Gov. Schwarzenegger Takes Action to Address California's Water Shortage (Feb. 27, 2009) (see Attachment C).
[70] Brydon v. E. Bay Mun. Util. Dist., 24 Cal.App.4th 178, 202 (Cal. Ct. App. 1994).
[71] *Id*.
[72] *Id*.

critical planning consideration in any new development project in the State of California.[73]

Under NEPA, a federal agency must make a good faith effort to disclose all the direct, indirect and cumulative environmental impacts of a proposed action, as well as those of each alternative.[74] Such impacts include effects resulting from a project's water supply needs.[75] The Council on Environmental Quality ("CEQ") NEPA regulations define indirect effects to include the reasonably foreseeable, related effects of a project on "water and other natural systems."[76] In addition, an EIS must discuss the extent to which a proposed action and alternatives would use natural or depletable resources, such as water. An EIS must disclose the water use that would result from both construction and operation of the Project, as well as the opportunities for conserving water through Project redesign and mitigation measures.[77]

In addition, the CEQ *Guide to Considering Cumulative Effects Under NEPA* expressly identifies impacts on surface and ground water quantity as potential cumulative impacts that must be evaluated under NEPA. The Guide requires NEPA documents to "pay special attention" to cumulative impacts on surface water from "unmanaged or unmonitored allocations of the water supply that exceed the capacity of the resource" and to cumulative impacts on groundwater from "[a]quifer depletion or salt water intrusion following the overdraught of groundwater for numerous uncoordinated uses."[78]

The Department of Interior has also issued a memorandum requiring environmental statements to "analyze any impacts on the quantity or quality of groundwater with specific emphasis on drinking water sources."[79] Pursuant to this memorandum any draft environmental statements for proposed actions affecting groundwater must be sent to the United States Geological Survey for review and

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[73] *See* CAL. WATER CODE §§ 10910, 10912.
[74] 40 C.F.R. §§ 1502.16, 1508.8, 1508.25.
[75] RONALD E. BASS ET AL., THE NEPA BOOK: A STEP-BY-STEP GUIDE ON HOW TO COMPLY WITH THE NATIONAL ENVIRONMENTAL POLICY ACT 111 (2d ed. 2001).
[76] 40 C.F.R. § 1508.8(b).
[77] *Id.*
[78] CEQ, CONSIDERING CUMULATIVE EFFECTS UNDER NEPA 24-25 (1997).
[79] Memorandum from Dir., Office of Environmental Policy & Compliance, U.S. Dep't of the Interior to Heads of Bureaus & Offices (Aug. 17, 1994) (Attachment D).

comment and those affecting the quality of groundwater drinking water sources must be sent to the EPA.[80]

Finally, numerous court decisions have recognized that NEPA applies to actions which may impact water supply.[81] For all these reasons, the BLM was required to identify the intended demand and source of water for the Project in the DEIS adequately. Local 477 and the Sierra Club, Wilderness Society and Natural Resources Defense Council ("NRDC") commented on BLM's failure to assess the Project's water demand and supply in the DEIS. The BLM's response to the public was wholly inadequate and did not, in good faith, address the public's valid concerns about the Project's water demand and supply.

a) BLM failed to provide a good faith, reasoned response to comments regarding the Project's water demand

Local 477 submitted comments, which highlighted that the Applicant most likely underestimated the Project's water use by about half. These comments were supported with extensive factual data, including calculations made by Oliver Seely, Ph.D., a professor at California State University, Dominguez Hills, and empirical data from other photovoltaic solar projects in San Bernardino County.[82] The Sierra Club, Wilderness Society and NRDC also commented that the DEIS is noticeably "vague" about the Project's operational water demand.[83] The comments asked the BLM to clarify what factors were considered in estimating the Project's water use.

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[80] *Id.*

[81] *See* Olmstead Citizens for a Better Comty. v. United States, 793 F.2d 201, 205 (8th Cir. 1986); (noting that impact statement may be necessary when federal action poses threat to area's physical resources including water supply); Goodman Group v. Dishroom, 679 F.2d 182, 185 (9th Cir. 1982) (federal actions may threaten physical environment by posing water supply problems); City of Davis v. Coleman, 521 F.2d 661, 671-72 (9th Cir. 1975) (finding that where development may affect quality and quantity of city water supply and render city's planning efforts obsolete, city should show injury in fact for purposes of standing under NEPA); Ely v. Velde, 451 F.2d 1130, 1134 (4th Cir. 1971) (EIS required due to potential environmental impacts of proposed prison medical center, including center's estimated water use of 40,000 gallons per day).

[82] Letter from Robyn C. Purchia, Attorney, Adams Broadwell Joseph & Cardozo, to Greg Thomsen, Bureau of Land Mgmt. 7-8 (May 20, 2010) (Appendix M to FEIS).

[83] Letter from Johanna Wald, Sr. Attorney NRDC, Helen O'Shea, Deputy Dir. NRDC, Barbara Boyle, Sr. Representative Sierra Club, Alice Bond, Cal. Pub. Lands Policy Analyst the Wilderness Society, to Greg Thomsen, Bureau of Land Mgmt. 6 (May 13, 2010) [hereinafter NRDC/Sierra Club/Wilderness Society Letter].

In response to Local 477 and the environmental organizations, the BLM explained that the estimated water use provided in the DEIS is based on specific site conditions and technology that is used for the Project.[84] This total lack of information and data is not a good faith, reasoned response that adequately addresses the public's comments. While estimated water use may vary from project-to-project, the BLM's response does not explain why this photovoltaic solar project in San Bernardino will use a different amount of water, and what specific site conditions were considered in the Applicant's water demand estimate.

The BLM must provide a reasoned response that explains how the technology from the proposed Project is different than the technology of other photovoltaic solar projects. The BLM must also explain how site conditions differ between the Project site and other areas of San Bernardino County. As described in the FEIS, there is still a strong possibility that the Applicant will use more water than anticipated and cause unevaluated impacts on water resources. Additionally, as San Bernardino County stated in its comments on the DEIS, if the Project anticipates using 10 acre feet per year or more of groundwater, County policy is to require a groundwater assessment report.[85]

b) BLM failed to provide a good faith, reasoned response to public comments regarding the Project's estimated water supply

Local 477 submitted both written and oral comments asking the BLM to clarify where the Applicant would get water for Project construction and maintenance. The reason for this request was so that the public and decision makers could understand all of the Project's impacts to the environment. For example, if the Project receives water from the local groundwater basin, it may impact the already overdrafted groundwater aquifer and other groundwater users.[86] If the Project will use surface water, additional federal, State and local permits may

[84] BLM Response to Comments, 041, 043.
[85] Letter from Carrie Hyke, AICP, Principal Planner, County of San Bernardino, to Greg Thomsen, Bureau of Land Mgmt. 2 (May 13, 2010) (Appendix M to FEIS).
[86] Letter from Robyn C. Purchia, Attorney, Adams Broadwell Joseph & Cardozo, to Greg Thomsen, Bureau of Land Mgmt. 10 (May 20, 2010) (Appendix M to FEIS).

be required.[87] The NRDC, Sierra Club and Wilderness Society also found it of great concern that the source of water was not identified.[88]

The BLM responded that water for panel washing would be trucked to the site and no additional federal, State or local approvals would be required.[89] "Water for panel washing would be provided through a contract with one of the local large industrial companies or municipal water companies that have high capacity wells and water systems."[90] Although the BLM stated that water would not be provided from the "Mojave Water District," we assume that it meant to state that the "Mojave Water Agency" would not provide construction or operation water to the Project.[91]

This response is completely insufficient. There is still no evidence in the FEIS that supports the BLM's assertion that no additional environmental effects that had not been identified in the DEIS would occur.[92] The Project may still have an undisclosed, unmitigated impact on the groundwater aquifer, other groundwater users and surface waters.

In addition, the BLM did not amend the inconsistent descriptions of the Project's water source. While in response to comments from Local 477, it stated that water would not be provided from the Mojave Water Agency, in response to comments from the Lucerne Valley Economic Development Association, it said that the Applicant may consider using Mojave Water Agency water.[93]

The BLM's response to public comments regarding the Project's water source is incomplete and inconsistent. It clearly does not demonstrate a good faith effort to respond to legitimate public concerns.

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[87] *Id.*
[88] NRDC/Sierra Club/Wilderness Society Letter, p. 4.
[89] BLM Response to Comments, 047.
[90] *Id.* at 101.
[91] *Id.* at 046.
[92] *Id.* at 047.
[93] *Id.* at 157.

2. BLM failed to respond to EPA's comments regarding climate change

The evaluation of global climate change under NEPA must include an analysis of the Project in the *context* of global climate change; the agency's analysis should not be limited to the greenhouse gas ("GHG") emissions associated with the proposed Project.[94]

> The environmental analysis and documents produced in the NEPA process should provide the decision maker with relevant and timely information about the environmental effects of his or her decision and reasonable alternatives to mitigate those impacts. In this context, climate change issues arise in relation to the consideration of:
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> (1) The GHG emissions effects of a proposed action and alternative actions; and
>
> (2) The relationship of climate change effects to a proposed action or alternatives, including the relationship to proposal design, environmental impacts, mitigation and adaptation measures.[95]

"With regards to the effects of climate change on the design of a proposed action and alternatives, Federal agencies must ensure the scientific and professional integrity of their assessment of the ways in which climate change . . . could affect environmental effects of the proposed action."[96] Climate change can affect the Project environment in a number of ways. For example, the CEQ recognizes that climate change "can affect the integrity of a development or structure by exposing it to a greater risk of floods, storm surges, or higher temperatures."[97] In addition, "an industrial process may draw cumulatively significant amounts of water from a stream that is dwindling because of decreased snow pack in the mountains or add

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[94] *See* Ctr. for Biological Diversity v. Kempthorne, 588 F.3d 701, 711 (9th Cir. 2009) (holding that USFWS adequately analyzed major federal action's impact to polar bears in context of warming climate).
[95] Memorandum from Nancy H. Sutley, Chair, Council on Environmental Quality to the Heads of Fed. Dep'ts and Agencies 1 (Feb. 18, 2010).
[96] *Id*. at 2.
[97] *Id*. at 6.

significant heat to a water body that is exposed to increasing atmospheric temperatures."[98]

In comments submitted on the DEIS, EPA stated that "the DEIS does not include measures to avoid, minimize, or mitigate the effects of climate change on the proposed project, nor does it discuss the extent to which climate change may alter the impacts of the proposed project on the environment."[99] Specifically, the EPA commented that the BLM should identify strategies to more effectively monitor for climate change impacts in the surrounding area, such as monitoring groundwater change or special status species.[100]

In response to EPA's comments, the FEIS provides:

> The understanding of how and when climate change may result in noticeable effects on the different species and habitats within the desert is unknown and speculative at this time. Similarly, changes in the hydrologic regimes for a specific area are unknown at this time. Based on these reasons, BLM has determined that discussion of climate change on hydrological regimes and biological resources are not necessary in this analysis.[101]

This statement does not rise to the level of a reasoned response. First, it is possible to identify strategies to effectively monitor for climate change impacts without knowing how and when climate change may result in noticeable effects. For example, the BLM can require the Applicant to monitor groundwater recharge in groundwater basins that supply water to the Project. Second, BLM's response contradicts federal agency guidance regarding the elements of an adequate analysis of climate change under NEPA.

As such, the information provided in the FEIS does not respond to the EPA's comments regarding the effect of climate change on the proposed Project. BLM's

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[98] *Id*. at 6-7.
[99] Letter from Kathleen M. Goforth, Manager, Environmental Review Office, U.S. Environmental Protection Agency, to Greg Thomsen, Bureau of Land Mgmt. (May 20, 2010) (Appendix M to the FEIS).
[100] *Id*.
[101] BLM Response to Comments, 239.

response violates NEPA because it does not constitute a good faith effort to respond to federal agency comments.

3. BLM failed to provide a good faith, reasoned response to EPA and public comments regarding the EIS's purpose and needs statement

The BLM's *NEPA Handbook* mandates that the purpose and need statement of an externally generated action must describe the BLM's purpose and need, not an applicant's or external proponent's purpose and need.[102] The "need" for the action is the underlying problem or opportunity to which the BLM is responding with the action.[103] The "purpose" is the goal or objective that the BLM is trying to reach.[104]

In comments submitted on the DEIS, Local 477 raised the issue that the BLM's Purpose and Need Statement is arbitrarily narrow and promotes private interests. Specifically, Local 477 stated that the "narrowly defined statement implies that BLM stands to gain nothing more than a rubber-stamped document at the end of this process."[105] While it is not clear what a right-of-way application rubber-stamped "approved" would provide to the BLM, it would clearly help the Applicant meet their goals to develop a renewable energy facility.[106]

Local 477's comments were echoed by the Defenders of Wildlife, the EPA, the Sierra Club, the NRDC and the Wilderness Society. In fact, the EPA indicated in its scoping comments ***and*** its comments on the DEIS that the BLM should acknowledge that the "need" for the Project is broader than the specific objectives of the activity.[107]

In its responses to public and agency comments, the BLM repeatedly ignored the requirement that a ***need*** be identified, ***not just a purpose*** for the Project. BLM stated that "[t]he purpose and need, as stated is accurate. The problem to be

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[102] NEPA HANDBOOK, p. 35.
[103] *Id.*
[104] *Id.*
[105] Letter from Robyn C. Purchia, Attorney, Adams Broadwell Joseph & Cardozo, to Greg Thomsen, Bureau of Land Mgmt. 33 (May 20, 2010) (Appendix M to FEIS).
[106] *Id.*
[107] Letter from Kathleen M. Goforth, Manager, Environmental Review Office, U.S. Environmental Protection Agency, to Greg Thomsen, Bureau of Land Mgmt. (May 20, 2010) (Appendix M to the FEIS).

addressed; for BLM, is to made a decision to grant, grant with modification, or deny a specific right of way application for a specific piece of land."[108] ***The BLM's statement only acknowledges a purpose for the Project, not a broader need***.

The BLM's failure to identify a need for the Project, as required by NEPA and BLM's *NEPA Handbook*, is a failure to provide a good faith response to numerous public and agency comments.

1. BLM failed to provide a good faith, reasoned response to the EPA and public comments regarding consideration of an alternate site

As Local 477 stated in its comments on the DEIS, the BLM failed to consider alternate sites because it relied on an arbitrarily narrow purpose and need statement.[109] The EPA and Defenders of Wildlife also commented that the BLM should consider an alternate site in its alternatives analysis.[110] Despite these public and agency comments, however, BLM did not consider an alternate site alternative.

The BLM's failure to provide a good faith, reasoned response to public and agency comments regarding the inadequate purpose and needs statement affected its ability to provide a reasoned response to comments regarding consideration of an alternate site. Specifically, BLM's response focused on what was economically feasible for the Applicant, instead of what would fulfill the broader needs of the BLM.[111] The BLM must expand its purpose and needs statement so that all alternatives can be considered.

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[108] BLM Response to Comments, 213.
[109] Letter from Robyn C. Purchia, Attorney, Adams Broadwell Joseph & Cardozo, to Greg Thomsen, Bureau of Land Mgmt. 34 (May 20, 2010) (Appendix M to FEIS).
[110] Letter from Jeff Aardahl, Cal. Representative, Defenders of Wildlife, to Greg Thomsen, Bureau of Land Mgmt. 3 (May 20, 2010) (Appendix M to FEIS); Letter from Kathleen M. Goforth, Manager, Environmental Review Office, U.S. Environmental Protection Agency, to Greg Thomsen, Bureau of Land Mgmt. (May 20, 2010) (Appendix M to the FEIS).
[111] BLM Response to Comments, 014.

2. BLM failed to provide a good faith, reasoned response to Local 477's comments regarding impacts to mesquite plants

In its comments on the DEIS, Local 477 urged the BLM to evaluate the Project's impacts to mesquite plants. Mesquite plants are vitally important to the region as a source of food and shelter to wildlife, and using large amounts of groundwater may impact the plants.[112] If the Project contributes to overdraft conditions, the Project will directly impact mesquite plants, which will indirectly impact wildlife that depend on mesquite plants.

BLM did not respond to Local 477's comments in good faith. It simply stated that "[o]verdraft conditions are not a part of this project."[113] This response is nonsensical and does not reasonably address Local 477's concerns. As discussed above, there is no evidence in the DEIS, FEIS or any of the supporting documents to suggest that the Project will not contribute to overdraft conditions. The Project may use significant amounts of groundwater from a region that is already in overdraft.[114] If it does, it will significantly affect mesquite plants.

The BLM must provide Local 477 with a good faith, reasoned response that addresses these legitimate environmental concerns.

V. THE PROJECT VIOALTES FLPMA

Through FLPMA, Congress directed the Secretary to initiate a comprehensive planning process and to establish a long-range management plan for the "use, development, and protection of the public lands within the California Desert Conservation Area [and required that such plan] take into account the principles of multiple use and sustained yield in providing for resource use and development, including, but not limited to, maintenance of environmental quality, rights-of-way, and mineral development."[115]

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[112] Letter from Robyn C. Purchia, Attorney, Adams Broadwell Joseph & Cardozo, to Greg Thomsen, Bureau of Land Mgmt. 22 (May 20, 2010) (Appendix M to FEIS).
[113] BLM Response to Comments, 094.
[114] FEIS, p. 3.5-6.
[115] 43 U.S.C. § 1781(d).

The CDCA Plan has served as the management plan for the CDCA for approximately thirty years. One of the foundational management principles of the CDCA Plan is to respond to:

> national priority needs for resource use and development, both today and in the future, including such paramount priorities as energy development and transmission, without compromising the basic desert resources of soil, air, water, and vegetation, or public values such as wildlife, cultural resources, or magnificent desert scenery. This means, in the face of unknowns, erring on the side of conservation in order not to risk today what we cannot replace tomorrow.[116]

Under this Plan, BLM inventories the desert area with public input and identified areas appropriate for wilderness, limited, moderate and intensive uses.[117] BLM must carefully consider the extensive programmatic inventory that went into the establishment of the CDCA Plan. In keeping with the Plan, BLM must not approve intensive industrialization in areas that were not designated for intensive use.

A. CDCA Plan should not be amended in a piecemeal fashion

The objective of BLM's resource management planning is to maximize resource values for the public through a ***rational, consistently applied set of regulations and procedures*** which promote the concept of multiple use management and ensure participation by the public, State and local governments, Indian tribes and appropriate federal agencies. "Consistent" application means that the BLM's plans will adhere to the terms, conditions and decisions of officially approved and adopted resource related plans, or in their absence, with policies and programs.[118] The purpose of resource management plans is to guide and control future management actions and the development of subsequent, more detailed and limited scope plans for resources and uses.[119]

The BLM is proposing to amend the CDCA on a project-by-project basis for a whole swath of industrial-scale renewable power plants. The CDCA Plan

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[116] CDCA PLAN, p. 6.
[117] *Id.* at 5.
[118] 43 C.F.R. § 1601.0-5(c).
[119] 43 C.F.R. § 1601.0-2.

encompasses 25 million acres in southern California.[120] Solar, wind and geothermal development applications have requested use of approximately 1 million acres of California desert.[121] This means that approximately 4 percent of California desert may be converted to industrial development. In addition, many of these proposals are not on lands designated for intensive use under the CDCA.

Because the CDCA was developed as a concerted effort with many federal and State agencies and enormous public input, it is improper to amend the Plan in such a piecemeal fashion on a project-by-project basis. The decision of whether to fundamentally change the character of the CDCA by permitting large industrial renewable development on areas not currently designated for intensive use should only be considered on a programmatic basis.

B. The industrial character of the Project does not strike CDCA's controlled balance or protect sensitive resources in violation of CDCA's designation

The Project area is designated Multiple-Use Class M (Moderate Use).[122] The Class M use is based on a controlled balance between higher intensity use and protection of public lands. While this use provides for a wide variety of uses, it is designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause.[123] Class M is distinguished from Class I (Intensive Use), which provides for concentrated use of lands and resources to meet human needs, such as the industrialization that would occur under the proposed Project.[124]

The BLM is considering amending the CDCA Plan to allow for solar power development on the Project site. Although renewable energy generation is a ***conditionally*** allowed use within Class M lands, BLM may only use these lands for solar power development under certain circumstances. For Class M lands, BLM must strike a controlled balance between higher intensity use and protection of

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[120] DEIS, p. 1-10.
[121] BUREAU OF LAND MGMT. & CAL. ENERGY COMM'N, STAFF ASSESSMENT & DRAFT ENVIRONMENTAL IMPACT STATEMENT CALICO SOLAR PROJECT B.3-1 (Mar. 2010).
[122] DEIS, p. 1-11.
[123] CDCA PLAN, p. 13.
[124] *Id.*

public lands. This entails conserving desert resources and mitigating any damage the proposed Project may cause.[125]

The intensity and size of the use associated with the proposed Project is fundamentally incompatible with the BLM's Class M designation. As proposed the Project will degrade the visual quality of the area, use undisclosed amounts of limited fresh water and groundwater, take federally and State protected species, impact fragile desert washes and increase soil erosion. Approximately 516 acres of fragile desert pavement will be destroyed, and the site will not likely recover for centuries, if ever. The Project design does not conserve desert resources and mitigate damage to those resources, as required by the Class M designation. Thus, the Project is incompatible with the CDCA Plan, and the BLM must not override the wisdom of this planning effort for the short-term benefits that may or may not accrue from the siting of this power plant.

BLM failed to assess the proposed Project's impact on sensitive values or to strike the controlled balance between the high intensity use and protection of public lands, as required by FLPMA and the CDCA Plan.

1. BLM must not approve the Project because it may jeopardize the continued existence of federally and State protected species

The CDCA Plan requires that "[a]ll state and federally listed species will be fully protected" in Class M areas.[126] "Actions which may jeopardize the existence of federally listed species will require consultation with the U.S. Fish and Wildlife Service."[127] In addition, sensitive species will be given protection in management decisions consistent with BLM policies.[128]

While the BLM has consulted with the USFWS regarding the Project's impacts to desert tortoises, it has not done so for golden eagles. Golden eagles are protected under the Bald and Golden Eagle Protection Act.[129] Permits are required

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[125] *Id*. at 13.
[126] *Id*. at 20.
[127] CDCA PLAN, p. 20.
[128] *Id.* at 20.
[129] 16 U.S.C.§§ 668-668d.

for all activities that disturb eagles.[130] USFWS regulations indicate the USFWS may consider the loss of foraging habitat on the Project site to constitute substantial interference with normal breeding, feeding, or sheltering behavior, which would be considered a "take."[131] The USFWS established minimum inventory and monitoring efforts that "are essential components" to avoiding and minimizing disturbances and other kinds of take of golden eagles.[132] Research indicates golden eagles selectively use available habitat, and that they concentrate their foraging activities in select "core" areas.

The Project site is within golden eagle foraging habitat.[133] There is no indication in the DEIS or FEIS, however, that the BLM has consulted with the USFWS regarding the take of foraging habitat. In addition, as discussed above, the DEIS and FEIS do not contain a complete analysis of all of the Project's impacts associated with the loss of foraging habitat for the golden eagle.

The BLM cannot legally approve the amendment to the CDCA Plan until it consults with the USFWS regarding impacts to this species.

2. BLM must not approve the Project because it would use undisclosed amounts of limited fresh water and groundwater resources

There is a shortage of water in California and intense competition for use of this limited resource. The CDCA Plan states that water is one of the "most essential resource components of the California Desert Conservation Area."[134] Management of water resources "is interrelated with management of all other resources in the Desert."[135] As discussed above, the DEIS and FEIS failed to adequately disclose the amount of water the Project would need and the Project's water source. Thus, the Project's impacts on water resources are unclear and unmitigated.

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[130] Eagle Permit Regulations at 50 C.F.R. Part 22.
[131] 50 C.F.R. § 22.26.
[132] U.S. FISH & WILDLIFE SERV., INTERIM GOLDEN EAGLE TECHNICAL GUIDANCE: INVENTORY AND MONITORING PROTOCOLS AND OTHER RECOMMENDATIONS IN SUPPORT OF GOLDEN EAGLE MANAGEMENT AND PERMIT ISSUANCE (Feb. 2010).
[133] FEIS, p. 3.6-23.
[134] CDCA PLAN, p. 113.
[135] *Id.*

The BLM's failure to strike a balance between water resources and the proposed use is clear. For example, the FEIS completely ignores the impact groundwater use could have on the groundwater aquifer, other groundwater users, mesquite plants and wildlife that depend on mesquite plants. The BLM just assumes that if the Applicant obtains water from an approved offsite source, the Project will not have any impacts on water resources. This is nonsensical and an obvious violation of FLPMA.

3. BLM must not approve the Project because it would significantly diminish the quality of surface waters within the Project site

According to the CDCA Plan, areas designated Class M must be managed to minimize degradation of water resources.[136] While this can include developing best management practices in a SWPPP, the SWPPP prepared for this Project just includes "boiler plate information" that "is less than satisfactory and could result in significant project impacts."[137]

As discussed above, the BLM failed to analyze new potentially significant impacts to soil and water that may result from proposed Project modifications. Specifically, removing vegetation and scarifying the Project site may increase surface runoff and cause subsequent erosion. In addition, the BLM failed to take a hard look at significant affects associated with desert wash morphology.

Because the BLM failed to manage the Project site to minimize degradation of water resources, it cannot approve the amendment to the CDCA Plan. Doing so would be an obvious violation of FLPMA.

4. BLM must not approve the Project because it would significantly degrade visual resources within the Project site

As explained above, the BLM failed to take a hard look at the Project's long-term impacts to visual resources. Mitigation measures, such as implementation of a 50-foot setback from Santa Fe Fire Road and use of a vegetative screen, may not be

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[136] *Id*. at 15.
[137] Campbell comments, p. 2.

sufficient to reduce the Project's significant effects on visual resources.[138] There is no indication in the DEIS or FEIS that the BLM considered the Project's impacts to County designated scenic highway, SR 247. Therefore, development of the Project may have a more significant impact on the environment than was previously analyzed in the DEIS and FEIS.

The BLM must strike a balance between desert resources, such as the visual landscape, and the proposed use.[139] If the Project will damage the Project area visually, adequate mitigation measures must be imposed. Because it is not clear whether the BLM considered all of the relevant factors when analyzing the significance of the Project's impacts to visual resources, it is not clear that sufficient mitigation measures have been proposed. Thus, the BLM must not approve the Project because it may significantly degrade visual resources within the Project site.

VI. CONCLUSION

IBEW Local 477 appreciates the opportunity to submit these comments on the FEIS.

Sincerely,

Robyn C. Purchia

RCP:cnh
Attachments:

Exhibit A: Campbell Comments
Exhibit B: Cornett Comments
Exhibit C: Press Release: Office of the Governor
Exhibit D: CEQ Memo re Climate Change

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[138] *See* FEIS, pp. ES-4 (describing Alternative 4); 2-40 (finding the Preferred Alternative to be a combination of Alternatives 3 and 4 with visual mitigation measures identified for Alternative 4).
[139] CDCA PLAN, p. 13.

cbec
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Hydraulics | Hydrology | Geomorphology | Design

MEMORANDUM

Date:	September 9, 2010
To:	Robyn Purchia
From:	Chris Campbell
Project:	10-2422– Lucerne Solar Project
Subject:	Hydrology Review

INTRODUCTION

The following information was reviewed for the Lucerne Solar Project to identify unanalyzed project impacts that could adversely affect the environment:

1. Hydrology sections of the Final Environmental Impact Statement (August, 2010)
2. Hydrology Study (July, 2010)

It is understood that the project site is located on an active and young alluvial wash and fan complex in the southwestern part of San Bernardino County at the foot of the San Bernardino National Forest on the western edge of the Mojave Desert. Based on the information presented, the hydrologic (i.e., rainfall-runoff) calculations are acceptable. However, there are significant shortcomings in the hydraulic and sedimentation analyses that warrant mentioning given the potentially significant morphological impacts to onsite and offsite resources.

SOIL EROSION

The impacts of grading and vegetation removal on soil erosion by water and subsequent sedimentation have not been analyzed by any form of soil loss calculations. At the site scale, access road grading, compaction, and application of EnviroKleen (a form of soil tackifier), result in hardened surfaces. These hardened surfaces could behave like a paved surface, as was generally assumed in the Hydrology Study based on the high Curve Number assignment in the hydrology calculations, resulting in increases in surface runoff across the project site due to decreases in infiltration capacity. This localized runoff could concentrate along the edge of the hardened surfaces, resulting in gully formation and subsequent sediment delivery from the solar array fields to the active washes, which has the potential to impact the morphology of the onsite washes and convey fine sediments offsite.

In addition to access road grading, vegetation removal and scarifying across the entire project site can enhance soil erosion by water by reducing interception losses. With reduced interception losses come increases in surface runoff and subsequent soil erosion. With scarifying comes destruction of the desert pavement and exposure of fine sediments formerly protected by the desert pavement surface clasts. Increases in soil loss from the soil array fields could result in excess sedimentation to the active washes and/or deposition within the solar array field. If the latter occurs, then significant impacts to cryptobiotic crusts could occur beyond those impacts associated with the process of vegetation removal and scarifying by burying the delicate crusts.

Climate change can also exacerbate onsite soil erosion. It is generally thought for this region that summertime storms, which are largely responsible for flash flooding, could increase the amount and intensity of rainfall, thereby increasing the erosivity of the rainfall and flashiness of surface runoff and subsequently result in additional soil erosion and increased amounts of runoff.

In addition, simply assuming the boiler plate information provided in the SWPPP (Appendix C in the Hydrology Study) would be sufficient to address sedimentation issues without the benefit of technical analyses is less than satisfactory and could result in significant project impacts (for both soil erosion concerns stated here and sediment transport concerns elaborated below).

SEDIMENT TRANSPORT

The impacts to wash morphology both onsite and offsite have not been analyzed. Specifically, 1) the buried tortoise fence crossing the washes, 2) the numerous solar support piers in the washes, 3) the use of three check dams in series at the downstream property boundary on multiple washes, and 4) the use of compacted aggregate for the Arizona crossings all pose significant impacts to the active washes. The tortoise fence at both the upstream and downstream locations of the washes could accumulate coarse aggregate, disrupting the sediment continuum from upstream to downstream, which could lead to both onsite and offsite degradation or incision of the washes. The numerous solar support piers in the washes could redirect and/or impede flood waters, which could enhance lateral migration and alter wash morphology. The use of three check dams in series at the downstream property boundary on multiple washes could trap sediments, thereby depriving downstream reaches, which could result in offsite degradation or incision of the washes. The use of compacted coarse aggregate for the Arizona crossings result in hardened sills acting as grade control that could adversely affect wash morphology. In combination, all four (4) proposed activities could result in significant impacts to wash morphology both onsite and offsite.

Regarding the hydraulic analyses, they were deficient on several fronts. The influence of the support piers, which behave like bridge piers, spaced roughly 7 feet apart along rows and roughly 19 feet apart between rows, are too numerous to be ignore. In addition to being subject to local scour effects, the piers are also subject to general scour, the latter of which was not analyzed. Total scour is the sum of general scour and pier scour, so the total exposure depth of the piers has likely been underestimated in this active wash system and would require the piers to be driven deeper into the ground. General scour was not included in the analyses, but for instance, could have been performed by running the HEC-RAS

model previously developed for the project with its built-in sediment transport functionality. Using this sediment transport functionality, the effects of the trapping efficiency of the check dams and tortoise fence and the hardened Arizona crossings could also have been analyzed to assess the potentially significant impacts of these project features on the morphology of the washes.

WATER SUPPLY AND DEMAND

The water supply source and water demand during different periods or phases of the project are not very well defined. In order to address project impacts, these items need to be sufficiently detailed and analyzed.

Hydraulics | Hydrology | Geomorphology | Design

Christopher Campbell, M.S., cbec, inc. eco-engineering, Vice-President

Education

Ph.D., in progress, Civil Engineering, University of Idaho, Center for Ecohydraulics Research, Boise, ID, USA.

M.S., 2003, Biological and Agricultural Engineering, University of Idaho, Moscow, Idaho, USA.

B.S., 1998, Agricultural Engineering (*summa cum laude)*, University of Idaho, Moscow, Idaho, USA.

Professional Experience

2008 – Present – Vice-President

cbec, inc., eco-engineering, Sacramento, CA. Providing environmental consulting services to the water resources industry.

2001–2008 - Hydrologist to Senior Associate Philip Williams & Associates (PWA), Ltd., Sacramento, CA

Professional Registration

1999, Engineer-in-Training, Idaho, #4896.

Chris Campbell has over eight years of engineering and project management experience with an emphasis in ecohydraulics and ecohydrology. He specializes in hydrodynamics, physical hydrology, sediment transport, geomorphology, water resources, and ecosystem restoration. His technical expertise routinely involves the application of GIS and computational models (e.g. 1D, 2D, and 3D), both public (e.g. HEC software) and proprietary (e.g. MIKE software), to inform a range of water resource and environmental assessment and restoration projects within riverine, estuarine, and wetland environments. Chris also performs field studies (e.g. topographic and bathymetric surveying, water quality monitoring, climate monitoring, flow gauging, sediment characterization, and sediment transport sampling) and uses the data to characterize site conditions and to develop, calibrate, and validate computational models.

Chris is also currently pursuing a part-time Ph.D. in Civil Engineering through the Center for Ecohydraulics Research at the University of Idaho. The focus of his research is to evaluate the potential hydrologic impacts of constructed vernal pools on natural vernal pools within the context of habitat mitigation and restoration design and monitoring. He is currently monitoring two restoration sites within the Central Valley and will employ a 3D vadose zone groundwater model to determine hydrologic and ecologic response for a range of design and climatic conditions.

Selected Project Experience

Suisun Valley Floodplain Modeling. Solano County, CA. 2009–present. As project manager and technical lead, Mr. Campbell was charged to evaluate valley-wide flood impacts to existing infrastructure and formulate practicable alternatives to alleviate these impacts. Under Phase 1 of the project, preparatory activities (e.g., literature review, LiDAR verification, etc.) were performed to develop and implement a monitoring program (i.e., continuous water level recorders, event-based discharge measurements) and a detailed hydrologic and hydrodynamic modeling plan as conducted during Phase 2 of the project.

Temperature Monitoring and Modeling, Lower American River. Sacramento, CA. January 2008–present. Worked as the project manager with the Water Forum to monitor temperature at 14 locations and stage at 4 locations along the Lower American River from Nimbus Dam to the confluence with the Sacramento River. Also, cbec has collaborated with HEC in Davis to construct a 1-dimensional, hydrodynamic HEC-RAS temperature model of the Lower American River. This model has an hourly time step. cbec is calibrating and validating this model using stage and temperature data collected in August and September 2008.

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North Delta Hydrodynamic and Water Quality Modeling and Monitoring. Yolo County, CA. 2008–present. As project manager on these multi-stakeholder, multi-objective studies, Mr. Campbell designed, installed, collected, and QC'd the monitoring data; supervised and QC'd the bathymetric data collection; created the bathymetric surface model; directed and QC'd the development and calibration of a MIKE 21FM hydrodynamic model for the Yolo Bypass–Liberty Island–Cache Slough complex; and continues to oversee the development and application of the model. The model is currently being used to support ongoing WQ and restoration studies.

Stanislaus River Honolulu Bar Restoration. Oakdale, CA. 2008–present. FISHBIO. As project manager on this salmonid habitat restoration project, Mr. Campbell designed and implemented a monitoring plan to support model calibration and supervised the development and application of a 2D model called SRH-2D to model a 7.5 mile reach from Knights Ferry to Orange Blossom bridge with the goal of designing a rearing habitat restoration project for the gravel bar.

Urrutia Pond Restoration. Sacramento, CA. Sacramento Area Flood Control Agency (SAFCA) and City of Sacramento, CA. April 2008–present. Worked as a project hydrologist as part of a team preparing the Surface Mining and Reclamation Act (SMARA) reclamation and restoration plan for the Urrutia Pond in the Lower American River Parkway.

Triangle Rock Environmental Assessment. Sacramento, CA. 2008–present. Sacramento County Department of Water Resources (DWR), CA. Project manager that conducted an environmental assessment for the proposed detention basin in the Laguna Creek Watershed to investigate the potential impacts of a proposed regional detention basin.

Fremont Landing Conservation Bank. Yolo County, CA. 2007–present. Wildlands, Inc. The project objective was to enhance site conditions at Fremont Landing to serve as a conservation bank to improve the aquatic and shaded riverine habitats for special-status anadromous salmonids. Project hydrologist responsibilities included development of a 2D curvilinear hydrodynamic model in MIKE 21C for Fremont Landing within the SAFCP (to include the Sacramento River, Sutter Bypass, Feather River, Yolo Bypass, and Natomas Cross Canal) and evaluation of the components and phasing of the preferred concept leading to a restoration approach that showed no significant impact relative to the Sacramento River design water surface and Yolo Bypass flow split.

Napa River Sediment Reduction and Habitat Enhancement Plan. Napa, CA. 2006–2008. California Land Stewardship Institute. The project objective was to develop a sediment reduction and habitat enhancement plan for 9 miles of the Napa River between Oak Knoll Ave and Oakville Cross Road. Responsibilities as PM for the hydrodynamics include technical supervision and quality assurance of the modeling. The hydrodynamic model MIKE FLOOD (1D and 2D dynamically coupled models) will be used to evaluate the preliminary alternatives with respect to flood reduction and habitat benefits, and to select a preferred alternative.

Sonoma Creek & Tributaries Feasibility Study. Sonoma, CA. 2006–2008. Southern Sonoma County RCD. The project objective was to identify restoration components and feasible designs for flood control for Sonoma Creek in the vicinity of Schellville. Responsibilities as PM under Phase II of the Work Program included technical supervision and quality assurance of the hydrodynamic modeling. The hydrodynamic model MIKE FLOOD was used to characterize existing conditions, test project alternatives and components, and to evaluate the preferred alternative with respect to flood hazard reductions and geomorphic stability.

Lake Merritt Channel 7th and 10th Street Reconstructions. Oakland, CA. 2006–2008. Rajappan & Meyer Consulting Engineers, Inc. and City of Oakland. The project objective was to improve circulation in Lake Merritt and connectivity between the Lake and the Oakland Estuary for recreational users. Responsibilities as lead hydrologist/modeler included updating the MIKE 11 model, testing the hydraulic performance of various project and non-project elements, and optimizing the performance of the flood conveyance channel.

Butte County Highway Improvement Vernal Pool Preserve Habitat Conservation and Enhancement Plan (HCEP). Butte County, CA. 2005–2008. Butte County Association of Governments and Caltrans. The project objective was to mitigate for the loss of vernal pool habitat associated with improvements along four Butte County highways. The Preserve will conserve and enhance existing vernal pool habitats and create new vernal pool habitats. Responsibilities as PM include development of a GIS-based hydrologic model for vernal pool landscapes and application of the model to the HCEP to evaluate the potential hydrologic impacts of constructed pools on existing pools. The hydrologic model developed in-house is the first of its kind to be applied to vernal pools at the landscape scale.

American River Sunrise Side Channel. Sacramento, CA. 2005–2008. Water Forum and SAFCA. The project objective is to reintroduce more frequent flows to a side channel on the American River to enhance steelhead spawning habitat. Responsibilities as PM include collecting baseline hydraulic data, calibrating a 2D (MIKE 21) hydrodynamic model, and assessing the geomorphic performance and sustainability of the conceptual alternatives using the calibrated hydraulic model.

Sediment Transport on the Pajaro River. Santa Cruz County, CA. 2005. Pajaro River Watershed Flood Prevention Authority. The Pajaro River is the subject of a proposed flood plan that is threatened by potential difficulties in obtaining permits for sediment removal. Responsibilities as lead modeler included 2D sediment transport in MIKE 21C to identify the effects of redesigning the flood project to better manage sediment.

Coyote Creek OM Analysis. Marin County. 2004–2008. Marin County Flood Control and Water Conservation District (FC&WCD). The project objective was to reassess the maintenance regime of the flood control channel and develop a design for a self-maintaining channel with ecological benefits. Responsibilities as PM included review of existing information, hydrologic model development and calibration, hydraulic model (HEC-RAS) development, estimation of equilibrium channel dimensions, and development of conceptual alternatives to reduce channel maintenance requirements.

Putah Creek Flow Restoration and Flood Conveyance. Solano County. 2004–2008. Solano County Water Agency. The project objective was to identify potential management measures downstream of the Putah Diversion Dam on Lower Putah Creek to reduce tailwater elevations to more closely match design conditions and to accurately model the flood conveyance of Lower Putah Creek to determine where the creek has restricted flow capacity and may pose a flood threat. Responsibilities as PM included modeling in HEC-RAS to identify management measures and modeling in MIKE 21C to identify flood conveyance hazards.

City of Sheridan Dam Break Analysis. Sheridan, OR. 2005–2007. City of Sheridan Public Works Department. The purpose of this project was to perform a dam failure and resulting flood wave analysis for the City's proposed off-line storage facility at the headwaters of La Toutena Mary Creek to fulfill Oregon Dam Safety requirements. Responsibilities as PM include modeling the dam break and flood wave in MIKE 11.

San Benancio and Harper Creeks FIS. 2003–2008. FEMA Region IX. The purpose of this mapping project was to develop updated FIRMs and FIS for San Benancio and Harper Creeks from new data in a digital format that meets the Guidelines and Specifications for Flood Hazard Mapping Partners. Specific PM tasks include detailed field reconnaissance, hydrologic analysis, hydraulic analysis (HEC-RAS), floodplain mapping, and reporting with all deliverables in TSDN format.

Sacramento National Wildlife Refuge. Rio Vista Unit, Tehama County. 2002–2003. Nature Conservancy. Project hydrologist responsible for developing MIKE 11 and MIKE 21 hydrodynamic models to assess existing conditions and the preferred alternative at the conceptual level for flood hazard reduction and ecosystem benefits and for assessing the geomorphic stability of the preferred alternative.

San Lorenzo River Flood Control Project Sediment Management. Santa Cruz, CA. 2002–2005. HDR Engineering, Inc. and the USACE, Sacramento District. Responsible for sediment transport and hydraulic modeling using HEC-6 and HEC-2, as well as developing protocol to incorporate new channel geometry and vegetation from monitoring data to allow performance-based assessment of dredging requirements. This information will be used in preparation of an Operation and Maintenance, Repair, Replacement and Rehabilitation (OMRR&R) Manual.

Napa Sonoma Marsh Restoration. Napa/Sonoma County. 2001–2002. Project hydrologist responsible for hydraulic modeling of one-dimensional sloughs and two-dimensional salt ponds under existing and project conditions to address salinity reduction alternatives, cohesive sediment transport, and restoration alternatives using MIKE FLOOD.

JAMES W. CORNETT
ECOLOGICAL CONSULTANTS

760-320-8135 FAX 760-3206182

September 10, 2010

Ms. Robyn C. Purchia
Adams Broadwell Joseph & Cardozo
520 Capitol Mall, Suite 350
Sacramento, California 95814

Subject: **Chevron Energy Solutions 45-MW Lucerne Valley Solar Project**

Dear Ms. Purchia:

I have reviewed both the Eagle Survey Report prepared by the Chambers Group and the Biological Opinion prepared by the United States Fish & Wildlife Service. Both of these documents involved biological issues with regard to the Chevron Energy Solutions Lucerne Valley Solar Project. My comments on the findings and conclusions described in the above documents are presented in this letter.

Eagle Survey Report

The Lucerne Valley Solar Plant will transform 516 acres of desert habitat into a solar electrical generating facility and will result in a significant loss of hunting territory for golden eagles in the region. The latter species is fully protected under the federal Bald and Golden Eagle Protection Act.[1]

According to the Eagle Survey Report prepared by the Chambers Group, three active nests are known to occur in the general region of the proposed solar facility.[2] One was within 5.5 miles of the project site. In addition, several hunting territories are within 10 miles of the project. These distances are so minimal for such a strong-flying bird that more than one of these eagles can be expected to forage over the project site.[3] More importantly, since desert environments are far less productive than the mesic environments mentioned in the Eagle Report, foraging areas must be

[1] Bald and Golden Eagle Protection Act, 1972, as amended.
[2] Chambers Group. 2010. Appendix L, Eagle Survey Report.
[3] Wheeler, B.K. 2003. *Raptors of Western North America.* Princeton University Press, Princeton, New Jersey.

correspondingly larger.[4] Estimates of at least 100 square miles of foraging territory for golden eagles in desert environments have been made. Therefore, one must conclude that golden eagles do, in fact, use the project site as a hunting territory.

Since only two days were spent surveying for eagles in often very rugged terrain, it is doubtful that all nests and eagles resident in the area were located. No surveys were conducted for eagles that were not nesting or whose nesting activities had been concluded considering the late date of the surveys. Therefore, the number of eagles and nesting sites must be considered a minimum total with an unknown maximum number residing in the general area of the project site. [5]

Another factor not considered in the Eagle Survey Report is the tentative existence of animals that depend upon desert resources for survival. Desert biologists have demonstrated that organisms living in arid regions have much less of a food resource margin.[6] That is, food resources are barely adequate for most animal inhabitants. Under such conditions, any lessening of food resources as a result of unusually severe drought or habitat loss immediately results in population declines. Eagles, being at the top of the food resource pyramid, are particularly susceptible to such environmental perturbations.[7] Thus, contrary to comments made in the Eagle Survey Report, a 5% loss of foraging habitat for one or more golden eagles could be disastrous for this species in the immediate region.

Finally, I was unable to locate resumes of those individuals who participated in the eagle surveys. I would be particularly interested to know the number of previous helicopter eagle surveys conducted by each of the individuals and any scientific publications on eagles produced by the biologists on board the helicopter.

USFWS Biological Opinion

The Biological Opinion states on page 6 that "When possible, the fence will be placed so that occupied (tortoise) burrows are located outside of the project area." Who determines when it is possible to realign the fence? It should be an independent biologist who makes this decision, not the project proponent. This needs to be clearly defined.

Also on page 6 of the biological opinion it states that tortoise clearance surveys should be done "at times conducive to desert tortoise activity." However, there is no specific mention as to the weather or seasonal factors that are conducive to tortoise activity. Survey times and conditions need to be clearly stated. If there are specific references that cover survey conditions these should be cited.

Again on page 6, it states that "Fences will be inspected quarterly and after each significant

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[4] Whitford, W. G. 2002. *Ecology of Desert Systems.* Elsvier Science Ltd., Maryland Heights, Missouri.
[5] Good, R. E., R. M. Nielson, H. H. Sawyer, and L. L. McDonald. 2004. Population Level Survey of Golden Eagles (*Aquila chrysaetos*) in the Western United States. Prepared for the USFWS.
[6] Sowell, J. B. 2001. *Desert Ecology.* University of Utah Press, Salt Lake City, Utah.
[7] Wheeler, B.K. 2003. *Raptors of Western North America.* Princeton University Press, Princeton, New Jersey.

precipitation event, throughout the life of the project." Is this to be done by the project proponent? An independent biologist should be responsible for conducting such inspections and the opinion should clearly state so.

Several references are made on page 7 and elsewhere concerning an “authorized biologist.” Who does the "authorized biologist" report to? Who hires the authorized biologist? Certainly the authorized biologist should be an independent biologist answerable only to the BLM.

A discussion of weed eradication begins on page 9. Since no studies have been conducted on the long-term impacts of herbicides on native plants and animals in desert environments, I recommend hand pulling of all weeds. Alternatively, the agencies can produce studies showing the chemicals have no long-term impacts.

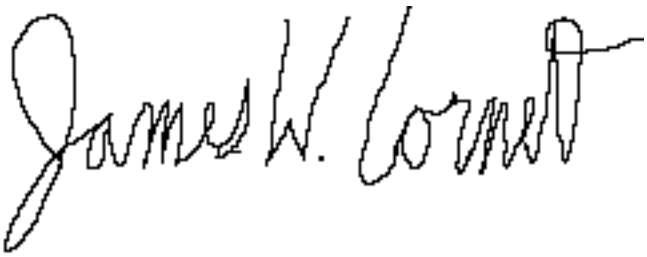
In the Opinion I did not see what the disposition of collected tortoises will be. This needs to be clarified.

Finally, cumulative impacts to the desert tortoise are essentially dismissed in the USFWS Opinion. The spread of solar facilities in the California deserts represents the single greatest threat to the continued survival of the desert tortoise. A thorough analysis of cumulative impacts needs to be presented.

In my opinion, these new and clarified mitigation measures contained in the Biological Opinion raise significant environmental concerns that need to be addressed in a supplemental EIS.

Please do not hesitate to contact me should you require additional information.

Sincerely,



James W. Cornett

P.O. BOX 846 PALM SPRINGS CALIFORNIA 92263

JAMES W. CORNETT - CURRICULUM VITAE - 2010

Personal Data

Name---James W. Cornett

Mailing Address---3745 Bogert Trails, Palm Springs, California 92263

Telephone Number---760-320-8135; Fax 760-320-6182

Place of Birth---South Gate, California, U.S.A.

Education

B.A., Biology, University of California at Riverside, 1976

M.S., Biology, California State University at San Bernardino, 1980

Positions Held

January, 1974 - Present
Owner-principal, JWC Ecological Consultants, P.O. Box 846, Palm Springs, California 92263

January, 1996 – June, 2004
Director of Natural Sciences, Palm Springs Desert Museum, 101 Museum Drive, Palm Springs, California 92263, 760-325-7186.

January, 1980 – December, 1995
Curator of Natural Sciences, Palm Springs Desert Museum

September, 1976 - December, 1979
Assistant Curator of Natural Science, Palm Springs Desert Museum

September, 1975 - June, 1976
Natural Science Instructor, Palm Springs Desert Museum

January, 1973 - Present
Environmental Columnist (weekly), Desert Sun-Gannett Newspapers, P.O. Box 2734, Palm Springs, California 92263.

JAMES W. CORNETT - CURRICULUM VITAE (continued)

January, 1981 - Present
Biology Instructor, University of California Extension, Riverside, California 92521, 909-787-4105. Courses taught include: Mammals of the Colorado Desert, Endangered Species of the California Deserts, The Desert Tortoise, Desert Bighorn Sheep, Ecology of Joshua Tree National Park, Ecology of The North American Deserts, Ecology of The Colorado Desert and Ecology of the Coachella Valley.

October, 1975 - June, 1983
Biology and Natural Resources Instructor (part-time), College of The Desert, 43500 Monterey Road, Palm Desert, California 92260, 760-346-8041.

January, 1973 - June, 1974
Assistant Naturalist (part-time), The Living Desert, 47900 Portola Avenue, Palm Desert, California 92260, 760-346-5694.

Professional Affiliations

American Society of Mammalogists
Bureau of Land Management Colorado Desert Advisory Committee
California Botanical Society
California Native Plant Society
Ecological Society of America
Herpetologists League
International Palm Society
Joshua Tree National Park Association, Board Member
Southern California Academy of Sciences
Southern California Botanists
Southwestern Naturalists' Society
Western Field Ornithologists

Office of the Governor ARNOLD SCHWARZENEGGER THE PEOPLE'S GOVERNOR

PRESS RELEASE

02/27/2009 GAAS:079:09 FOR IMMEDIATE RELEASE

Gov. Schwarzenegger Takes Action to Address California's Water Shortage

Proclaims State of Emergency, Directs Government to Utilize Resources, Help People

To combat California's third consecutive year of drought, Governor Arnold Schwarzenegger today proclaimed a state of emergency and ordered immediate action to manage the crisis. In the proclamation, the Governor uses his authority to direct all state government agencies to utilize their resources, implement a state emergency plan and provide assistance for people, communities and businesses impacted by the drought.

"Even with the recent rainfall, California faces its third consecutive year of drought and we must prepare for the worst - a fourth, fifth or even sixth year of drought," Governor Schwarzenegger said. "Last year we experienced the driest spring and summer on record and storage in the state's reservoir system is near historic lows. This drought is having a devastating impact on our people, our communities, our economy and our environment - making today's action absolutely necessary. This is a crisis, just as severe as an earthquake or raging wildfire, and we must treat it with the same urgency by upgrading California's water infrastructure to ensure a clean and reliable water supply for our growing state."

The Governor's order directs various state departments to engage in activity to provide assistance to people and communities impacted by the drought. The proclamation:

- Requests that all urban water users immediately increase their water conservation activities in an effort to reduce their individual water use by 20 percent
- Directs the Department of Water Resources (DWR) to expedite water transfers and related efforts by water users and suppliers
- Directs DWR to offer technical assistance to agricultural water suppliers and agricultural water users, including information on managing water supplies to minimize economic impacts and implementing efficient water management practices
- Directs DWR to implement short-term efforts to protect water quality or water supply, such as the installation of temporary barriers in the Delta or temporary water supply connections
- Directs the Labor and Workforce Development Agency to assist the labor market, including job training and financial assistance
- Directs DWR to join with other appropriate agencies to launch a statewide water conservation campaign calling for all Californians to immediately decrease their water use
- Directs state agencies to immediately implement a water use reduction plan and take immediate water conservation actions and requests that federal and local agencies also implement water use reduction plans for facilities within their control

In particular, the order directs that by March 30, 2009, DWR shall provide an updated report on the state's drought conditions and water availability. According to the proclamation, if the emergency conditions have not been sufficiently mitigated, the Governor will consider additional steps. These could include the institution of mandatory water rationing and mandatory reductions in water use; reoperation of major reservoirs in the state to minimize impacts of the drought; additional regulatory relief or permit streamlining as allowed under the Emergency Services Act; and other actions necessary to prevent, remedy or mitigate the effects of the extreme drought conditions.

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DWR and California's Department of Food and Agriculture will also recommend, within 30 days, measures to reduce the economic impacts of the drought, including but not limited to water transfers, through-Delta emergency transfers, water conservation measures, efficient irrigation practices, and improvements to the California Irrigation Management Information System.

Last week, DWR announced that California's severe drought had prevented it from increasing its State Water Project (SWP) delivery allocations for the first time since 2001. This year's allocation as of February is at just 15 percent of SWP contractor's requests. This is only the second time in SWP history that the February allocation has been this low.

The drought conditions and water restrictions are causing additional devastating economic and business losses. Agricultural revenue losses exceed $300 million to date and could exceed $2 billion in the coming season, with a total economic loss of nearly $3 billion in 2009.

Full text of proclamation:

A PROCLAMATION
BY THE GOVERNOR OF THE STATE OF CALIFORNIA

WHEREAS the State of California is now in its third consecutive year of drought; and

WHEREAS in each year of the current drought, annual rainfall and the water content in the Sierra snowpack have been significantly below the amounts needed to fill California's reservoir system; and

WHEREAS the rainfall and snowpack deficits in each year of the current drought have put California further and further behind in meeting its essential water needs; and

WHEREAS statewide, 2008 was the driest spring and summer on record, with rainfall 76 percent below average; and

WHEREAS the Sacramento and San Joaquin River systems, which provide much of the state's reservoir inflow, were classified as Critically Dry for the 2008 water year; and

WHEREAS in the second year of this continuous drought, on June 4, 2008, I issued an Executive Order proclaiming a statewide drought, and I ordered my administration to begin taking action to address the water shortage; and

WHEREAS because emergency conditions existed in the Central Valley in the second year of the drought, I issued an Emergency Proclamation on June 12, 2008, finding that conditions of extreme peril to the safety of persons and property existed in the counties of Sacramento, San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern caused by severe drought conditions, and I ordered my administration to take emergency action to assist the Central Valley; and

WHEREAS the drought conditions and water delivery limitations identified in my prior Executive Order and Emergency Proclamation still exist, and have become worse in this third year of drought, creating emergency conditions not just in the Central Valley, but throughout the State of California, as the adverse environmental, economic, and social impacts of the drought cause widespread harm to people, businesses, property, communities, wildlife and recreation; and

WHEREAS despite the recent rain and snow, the three year cumulative water deficit is so large there is only a 15 percent chance that California will replenish its water supply this year; and

WHEREAS in the time since the state's last major drought in 1991, California added 9 million new residents, experienced a significant increase in the planting of permanent, high-value crops not subject to fallowing, and was subjected to new biological opinions that reduced the flexibility of water operations throughout the year; and

WHEREAS because there is no way to know when the drought will end, further urgent action is needed to address the water shortage and protect the people and property in California; and

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WHEREAS rainfall levels statewide for the 2008-2009 water year are 24 percent below average as of the February 1, 2009 measurement; and

WHEREAS the second snow pack survey of the 2009 winter season indicated that snow pack water content is 39 percent below normal; and

WHEREAS as of February 23, 2009, storage in the state's reservoir system is at a historic low, with Lake Oroville 70 percent below capacity, Shasta Lake 66 percent below capacity, Folsom Lake 72 percent below capacity, and San Luis Reservoir 64 percent below capacity; and

WHEREAS low water levels in the state's reservoir system have significantly reduced the ability to generate hydropower, including a 62 percent reduction in hydropower generation at Lake Oroville from October 1, 2008 to January 31, 2009; and

WHEREAS a biological opinion issued by the United States Fish and Wildlife Service on December 15, 2008, imposed a 30 percent restriction on water deliveries from the State Water Project and the Central Valley Project to protect Delta Smelt; and

WHEREAS State Water Project water allocations have now been reduced to 15 percent of requested deliveries, matching 1991 as the lowest water allocation year in State Water Project history, and Central Valley Project water allocations for agricultural users have now been reduced to zero; and

WHEREAS the lack of water has forced California farmers to abandon or leave unplanted more than 100,000 acres of agricultural land; and

WHEREAS California farmers provide nearly half of the fresh fruits, nuts and vegetables consumed by Americans, and the crop losses caused by the drought will increase food prices, which will further adversely impact families and economies throughout California and beyond our borders; and

WHEREAS agricultural revenue losses exceed $300 million to date and could exceed $2 billion in the coming season, with a total economic loss of nearly $3 billion in 2009; and

WHEREAS it is expected that State Water Project and Central Valley Project water delivery reductions will cause more than 80,000 lost jobs; and

WHEREAS the income and job losses will adversely impact entire communities and diverse sectors of the economy supported by those jobs and income, including the housing market and commercial business; and

WHEREAS these conditions are causing a loss of livelihood for many thousands of people, an inability to provide for families, and increased harm to the communities that depend on them; and

WHEREAS this loss of income and jobs will increase the number of defaults, foreclosures and bankruptcies, and will cause a loss of businesses and property at a time when Californians are already struggling with a nationwide and worldwide economic downturn; and

WHEREAS the Central Valley town of Mendota, as one example, already reports an unemployment rate of more than 40 percent and lines of a thousand or more for food distribution; and

WHEREAS when jobs, property and businesses are lost, some families will move away from their communities, causing further harm to local economies, lower enrollments in local schools and reduced funding for schools; and

WHEREAS at least 18 local water agencies throughout the state have already implemented mandatory water conservation measures, and 57 agencies have implemented other water conservation programs or restrictions on water deliveries, with many agencies considering additional rationing and water supply reductions in 2009; and

WHEREAS the lack of water has forced local communities to draw water from their emergency water reserves, putting communities at risk of further catastrophe if emergency reserves are depleted or cut off; and

WHEREAS the state recently endured one of its worst wildfire seasons in history and the continuing drought

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conditions increase the risk of devastating fires and reduced water supplies for fire suppression; and

WHEREAS on February 26, 2009, the United States Department of Agriculture and the United States Department of Interior created a Federal Drought Action Team to assist California to minimize the social, economic, and environmental impacts of the current drought; and

WHEREAS the circumstances of the severe drought conditions, by reason of their magnitude, are beyond the control of the services, personnel, equipment and facilities of any single county, city and county, or city and require the combined forces of a mutual aid region or regions to combat; and

WHEREAS under the provisions of section 8558(b) of the California Government Code, I find that conditions of extreme peril to the safety of persons and property exist in California caused by the current and continuing severe drought conditions and water delivery restrictions.

NOW, THEREFORE, I, ARNOLD SCHWARZENEGGER, Governor of the State of California, in accordance with the authority vested in me by the California Constitution and the California Emergency Services Act, and in particular California Government Code sections 8625 and 8571, **HEREBY PROCLAIM A STATE OF EMERGENCY** to exist in California.

IT IS HEREBY ORDERED that all agencies of the state government utilize and employ state personnel, equipment and facilities for the performance of any and all activities consistent with the direction of the California Emergency Management Agency (CalEMA) and the State Emergency Plan.

I FURTHER DIRECT THAT:

1. The California Department of Water Resources (DWR) shall, in partnership with other appropriate agencies, launch a statewide water conservation campaign calling for all Californians to immediately decrease their water use.

2. DWR shall implement the relevant mitigation measures identified in the Environmental Water Account Environmental Impact Report, Environmental Impact Statement, Supplement, and Addendums for the water transfers made through the 2009 Drought Water Bank. In addition, the California Air Resources Board shall, in cooperation with DWR and other agencies, expedite permitting and development of mitigation measures related to air quality impacts which may result from groundwater substitution transfers.

3. DWR and the State Water Resources Control Board (SWRCB) shall expedite the processing of water transfers and related efforts by water users and suppliers that cannot participate in the 2009 Drought Water Bank, provided the water users and suppliers can demonstrate that the transfer will not injure other legal users of water or cause unreasonable effects on fish and wildlife.

4. The SWRCB shall expedite the processing and consideration of the request by DWR for approval of the consolidation of the places of use and points of diversion for the State Water Project and federal Central Valley Project to allow flexibility among the projects and to facilitate water transfers and exchanges.

5. DWR shall implement short-term efforts to protect water quality or water supply, such as the installation of temporary barriers in the Delta or temporary water supply connections.

6. The SWRCB shall expedite the processing and consideration of requests by DWR to address water quality standards in the Delta to help preserve cold water pools in upstream reservoirs for salmon preservation and water supply.

7. To the extent allowed by applicable law, state agencies within my administration shall prioritize and streamline permitting and regulatory compliance actions for desalination, water conservation and recycling projects that provide drought relief.

8. The Department of General Services shall, in cooperation with other state agencies, immediately implement a water use reduction plan for all state agencies and facilities. The plan shall include immediate water conservation actions and retrofit programs for state facilities. A moratorium shall be placed on all new landscaping projects at state facilities and on state highways and roads except for those that use water efficient irrigation, drought tolerant plants or non-irrigated erosion control.

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9. As a condition to receiving state drought financial assistance or water transfers provided in response to this emergency, urban water suppliers in the state shall be required to implement a water shortage contingency analysis, as required by California Water Code section 10632. DWR shall offer workshops and technical assistance to any agency that has not yet prepared or implemented the water shortage contingency analysis required by California law.

10. DWR shall offer technical assistance to agricultural water suppliers and agricultural water users, including information on managing water supplies to minimize economic impacts, implementing efficient water management practices, and using technology such as the California Irrigation Management Information System (CIMIS) to get the greatest benefit from available water supplies.

11. The Department of Public Health shall evaluate the adequacy of emergency interconnections among the state's public water systems, and provide technical assistance and continued financial assistance from existing resources to improve or add interconnections.

12. DWR shall continue to monitor the state's groundwater conditions, and shall collect groundwater-level data and other relevant information from water agencies, counties, and cities. It is requested that water agencies, counties and cities cooperate with DWR by providing the information needed to comply with this Proclamation.

13. DWR and the Department of Food and Agriculture shall recommend, within 30 days from the date of this Proclamation, measures to reduce the economic impacts of the drought, including but not limited to, water transfers, through-Delta emergency transfers, water conservation measures, efficient irrigation practices, and improvements to CIMIS.

14. The Department of Boating and Waterways shall recommend, within 30 days from the date of this Proclamation, and in cooperation with the Department of Parks and Recreation, measures to reduce the impacts of the drought conditions to water-based recreation, including but not limited to, the relocation or extension of boat ramps and assistance to marina owners.

15. The Labor and Workforce Development Agency shall recommend, within 30 days from the date of this Proclamation, measures to address the impact of the drought conditions on California's labor market, including but not limited to, identifying impacted areas, providing one-stop service, assisting employers and workers facing layoffs, and providing job training and financial assistance.

16. DWR and the Department of Food and Agriculture shall be the lead agencies in working with the Federal Drought Action Team to coordinate federal and state drought response activities.

17. The emergency exemptions in Public Resources Code sections 21080(b)(3), 21080(b)(4) and 21172, and in California Code of Regulations, title 14, section 15269(c), shall apply to all actions or efforts consistent with this Proclamation that are taken to mitigate or respond to this emergency. In addition, Water Code section 13247 is suspended to allow expedited responses to this emergency that are consistent with this Proclamation. The Secretary for the California Environmental Protection Agency and the Secretary for the California Natural Resources Agency shall determine which efforts fall within these exemptions and suspension, ensuring that these exemptions and suspension serve the purposes of this Proclamation while protecting the public and the environment. The Secretaries shall maintain on their web sites a list of the actions taken in reliance on these exemptions and suspension.

18. By March 30, 2009, DWR shall provide me with an updated report on the state's drought conditions and water availability. If the emergency conditions have not been sufficiently mitigated, I will consider issuing additional orders, which may include orders pertaining to the following:

(a) institution of mandatory water rationing and mandatory reductions in water use;

(b) reoperation of major reservoirs in the state to minimize impacts of the drought;

(c) additional regulatory relief or permit streamlining as allowed under the Emergency Services Act; and

(d) other actions necessary to prevent, remedy or mitigate the effects of the extreme drought conditions.

I FURTHER REQUEST THAT:

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19. All urban water users immediately increase their water conservation activities in an effort to reduce their individual water use by 20 percent.

20. All agricultural water suppliers and agricultural water users continue to implement, and seek additional opportunities to immediately implement, appropriate efficient water management practices in order to minimize economic impacts to agriculture and make the best use of available water supplies.

21. Federal and local agencies also implement water use reduction plans for facilities within their control, including immediate water conservation efforts.

I FURTHER DIRECT that as soon as hereafter possible, this proclamation be filed in the Office of the Secretary of State and that widespread publicity and notice be given of this proclamation.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 27th day of February, 2009.

ARNOLD SCHWARZENEGGER
Governor of California

ATTEST:
DEBRA BOWEN
Secretary of State

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February 18, 2010

MEMORANDUM FOR HEADS OF FEDERAL DEPARTMENTS AND AGENCIES

FROM: NANCY H. SUTLEY, Chair, Council on Environmental Quality

SUBJECT: DRAFT NEPA GUIDANCE ON CONSIDERATION OF THE EFFECTS OF CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

I. INTRODUCTION

The Council on Environmental Quality (CEQ) provides this draft guidance memorandum for public consideration and comment on the ways in which Federal agencies can improve their consideration of the effects of greenhouse gas (GHG) emissions[1] and climate change in their evaluation of proposals for Federal actions under the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 et seq. This draft guidance is intended to help explain how agencies of the Federal government should analyze the environmental effects of GHG emissions and climate change when they describe the environmental effects of a proposed agency action in accordance with Section 102 of NEPA and the CEQ Regulations for Implementing the Procedural Provisions of NEPA, 40 C.F.R. parts 1500-1508. This draft guidance affirms the requirements of the statute and regulations and their applicability to GHGs and climate change impacts. CEQ proposes to advise Federal agencies that they should consider opportunities to reduce GHG emissions caused by proposed Federal actions and adapt their actions to climate change impacts throughout the NEPA process and to address these issues in their agency NEPA procedures.

The environmental analysis and documents produced in the NEPA process should provide the decision maker with relevant and timely information about the environmental effects of his or her decision and reasonable alternatives to mitigate those impacts. In this context, climate change issues arise in relation to the consideration of:

(1) The GHG emissions effects of a proposed action and alternative actions; and
(2) The relationship of climate change effects to a proposed action or alternatives, including the relationship to proposal design, environmental impacts, mitigation and adaptation measures.

NEPA demands informed, realistic governmental decision making. CEQ proposes to advise Federal agencies to consider, in scoping their NEPA analyses, whether analysis of the direct and indirect GHG emissions from their proposed actions may provide meaningful information to decision makers and the public. Specifically, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO_2-equivalent GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. For long-term actions that have annual direct emissions of less than 25,000

[1] For purposes of this guidance, CEQ defines "GHGs" in accordance with Section 19(i) of Executive Order 13514 (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).

metric tons of CO_2-equivalent, CEQ encourages Federal agencies to consider whether the action's long-term emissions should receive similar analysis. CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs.

CEQ does not propose to make this guidance applicable to Federal land and resource management actions, but seeks public comment on the appropriate means of assessing the GHG emissions and sequestration that are affected by Federal land and resource management decisions.

Because climate change is a global problem that results from global GHG emissions, there are more sources and actions emitting GHGs (in terms of both absolute numbers and types) than are typically encountered when evaluating the emissions of other pollutants. From a quantitative perspective, there are no dominating sources and fewer sources that would even be close to dominating total GHG emissions. The global climate change problem is much more the result of numerous and varied sources, each of which might seem to make a relatively small addition to global atmospheric GHG concentrations. CEQ proposes to recommend that environmental documents reflect this global context and be realistic in focusing on ensuring that useful information is provided to decision makers for those actions that the agency finds are a significant source of GHGs.

With regards to the effects of climate change on the design of a proposed action and alternatives, Federal agencies must ensure the scientific and professional integrity of their assessment of the ways in which climate change is affecting or could affect environmental effects of the proposed action. 40 CFR 1502.24. Under this proposed guidance, agencies should use the scoping process to set reasonable spatial and temporal boundaries for this assessment and focus on aspects of climate change that may lead to changes in the impacts, sustainability, vulnerability and design of the proposed action and alternative courses of action. At the same time, agencies should recognize the scientific limits of their ability to accurately predict climate change effects, especially of a short-term nature, and not devote effort to analyzing wholly speculative effects. Agencies can use the NEPA process to reduce vulnerability to climate change impacts, adapt to changes in our environment, and mitigate the impacts of Federal agency actions that are exacerbated by climate change.

Finally, CEQ seeks public comment on several issues not directly addressed by this draft guidance, including the assessment of climate change effects of land management activities, and means by which agencies can tailor the amount of the documentation prepared for NEPA analysis so that it is proportional to the importance of climate change to the decision-making process.

II. CONSIDERATION OF THE EFFECTS OF A PROPOSED AGENCY ACTION ON GHG EMISSIONS: WHEN TO EVALUATE GHG EMISSIONS

By statutes, Executive Orders, and agency policies, the Federal government is committed to the goals of energy conservation, reducing energy use, eliminating or reducing GHG emissions, and promoting the deployment of renewable energy technologies that are cleaner and more efficient. Where a proposal for Federal agency action implicates these goals, information on GHG emissions (qualitative or quantitative) that is useful and relevant to the decision should be used when deciding among alternatives.

Many projects and programs proposed by the Federal government have the potential to emit GHGs. Accordingly, where a proposed Federal action that is analyzed in an EA or EIS would be anticipated to emit GHGs to the atmosphere in quantities that the agency finds may be meaningful, it is appropriate for the agency to quantify and disclose its estimate of the expected annual direct and indirect GHG emissions in the environmental documentation for the proposed action. Where the proposed

activity is subject to GHG emissions accounting requirements, such as Clean Air Act reporting requirements that apply to stationary sources that directly emit 25,000 metric tons or more of CO_2-equivalent GHG on an annual basis,[2] the agency should include this information in the NEPA documentation for consideration by decision makers and the public. CEQ does not propose this reference point for use as a measure of indirect effects, the analysis of which must be must be bounded by limits of feasibility in evaluating upstream and downstream effects of Federal agency actions. In the agency's analysis of direct effects, it would be appropriate to: (1) quantify cumulative emissions over the life of the project; (2) discuss measures to reduce GHG emissions, including consideration of reasonable alternatives; and (3) qualitatively discuss the link between such GHG emissions and climate change. However, it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions, as such direct linkage is difficult to isolate and to understand. The estimated level of GHG emissions can serve as a reasonable proxy for assessing potential climate change impacts, and provide decision makers and the public with useful information for a reasoned choice among alternatives.

The reference point of 25,000 metric tons of direct CO_2-equivalent GHG emissions may provide agencies with a useful indicator – rather than an absolute standard of insignificant effects -- for agencies' action-specific evaluation of GHG emissions and disclosure of that analysis in their NEPA documents. CEQ does not propose this reference point as an indicator of a level of GHG emissions that may significantly affect the quality of the human environment, as that term is used by NEPA, but notes that it serves as a minimum standard for reporting emissions under the Clean Air Act. Evaluation of significance under NEPA is done by the action agency based on the categorization of actions in agency NEPA procedures and action-specific analysis of the context and intensity of the environmental impacts. 40 CFR 1501.4, 1508.27. Examples of proposals for Federal agency action that may warrant a discussion of the GHG impacts of various alternatives, as well as possible measures to mitigate climate change impacts, include: approval of a large solid waste landfill; approval of energy facilities such as a coal-fired power plant; or authorization of a methane venting coal mine. Other Federal policies, programs, or plans that cover multiple actions subject to NEPA – such as actions tiered from programmatic NEPA documents – may more appropriately address GHG emissions at the level of individual projects. In many cases, the GHG emissions of the proposed action may be so small as to be a negligible consideration. Agency NEPA procedures may identify actions for which GHG emissions and other environmental effects are neither individually or cumulatively significant. 40 CFR 1507.3.

Many agency NEPA analyses to date have found that GHG emissions from an individual agency action have small potential effects. Emissions from many proposed Federal actions would not typically be expected to produce an environmental effect that would trigger or otherwise require a detailed discussion in an EIS. Significant national policy decisions for which the action's GHG impacts are expected to be substantial have, on the other hand, required analysis of their GHG effects.

HOW TO EVALUATE GHG EMISSIONS

To describe the impact of an agency action on GHG emissions, once an agency has determined that this is appropriate, CEQ proposes that agencies should consider quantifying those emissions using the

[2] 25,000 metric tons may provide a useful, presumptive, threshold for discussion and disclosure of GHG emissions because it has been used and proposed in rule-makings under the Clean Air Act (e.g., EPA's Mandatory Reporting of Greenhouse Gases Final Rule, 74 FR 56260, October 30, 2009). This threshold is used in Clean Air Act rule-makings because it provides comprehensive coverage of emissions with a reasonable number of reporters, thereby creating an important data set useful in quantitative analyses of GHG policies, programs and regulations. See 74 FR 56272. This rationale is pertinent to the presentation of NEPA analysis as well.

following technical documents, to the extent that this information is useful and appropriate for the proposed action under NEPA:

- For quantification of emissions from large direct emitters: 40 CFR Parts 86, 87, 89, et al. Mandatory Reporting of Greenhouse Gases; Final Rule, U.S. Environmental Protection Agency (74 Fed. Reg. 56259-56308). Note that "applicability tools" are available (http://www.epa.gov/climatechange/emissions/GHG-calculator/) for determining whether projects or actions exceed the 25,000 metric ton of CO2-equivalent greenhouse gas emissions.
- For quantification of Scope 1 emissions at Federal facilities: Greenhouse gas emissions accounting and reporting guidance that will be issued under Executive Order 13514 Sections 5(a) and 9(b) (http://www.ofee.gov)
- For quantification of emissions and removals from terrestrial carbon sequestration and various other project types: Technical Guidelines, Voluntary Reporting of Greenhouse Gases, (1605(b) Program, U.S. Department of Energy (http://www.eia.doe.gov/oiaf/1605/))

Land management techniques, including changes in land use or land management strategies, lack any established Federal protocol for assessing their effect on atmospheric carbon release and sequestration at a landscape scale. Therefore, at this time, CEQ seeks public comment on this issue but has not identified any protocol that is useful and appropriate for NEPA analysis of a proposed land and resource management actions.

CEQ notes that agencies may also find useful information in the following sources:

- Renewable Energy Requirements Guidance for EPACT 2005 and EO 13423 (http://www.ofee.gov/eo/epact05_fedrenewenergyguid_final_on_web.pdf)
- EPA Climate Leaders GHG Inventory Protocols (http://www.epa.gov/climateleaders/resources/inventory-guidance.html)

For proposed actions that are not adequately addressed in the GHG emission reporting protocols listed above, agencies should use NEPA's provisions for inter-agency consultation with available expertise to identify and follow the best available procedures for evaluating comparable activities. Agencies should consider the emissions source categories, measurement methodologies and reporting criteria outlined in these documents, as applicable to the proposed action, and follow the relevant procedures for determining and reporting emissions. The NEPA process does not require submitting a formal report or participation in the reporting programs. Rather, under this proposed guidance, only the methodologies relevant to the emissions of the proposed project need to be considered and disclosed to decision makers and the public.

WHAT DEPARTMENTS AND AGENCIES SHOULD CONSIDER AS PART OF THEIR GHG EVALUATION

Federal agencies should structure their NEPA processes "to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment." 40 CFR 1502.1. Inherent in NEPA and the CEQ implementing regulations is a "'rule of reason,' which ensures that agencies determine whether and to what extent to prepare an EIS based on the usefulness of any new potential information to the decisionmaking process." *DOT v. Public Citizen,* 541 U.S. 752, 767 (2004). Where a proposed action is evaluated in either an EA or an EIS, the agency may look to reporting thresholds in the technical documents cited above as a point of reference for

determining the extent of direct GHG emissions analysis that is appropriate to the proposed agency decision. As proposed in draft guidance above, for Federal actions that require an EA or EIS the direct and indirect GHG emissions from the action should be considered in scoping and, to the extent that scoping indicates that GHG emissions warrant consideration by the decision maker, quantified and disclosed in the environmental document. 40 CFR 1508.25. In assessing direct emissions, an agency should look at the consequences of actions over which it has control or authority. *Public Citizen,* 541 U.S. at 768. When a proposed federal action meets an applicable threshold for quantification and reporting, as discussed above, CEQ proposes that the agency should also consider mitigation measures and reasonable alternatives to reduce action-related GHG emissions. Analysis of emissions sources should take account of all phases and elements of the proposed action over its expected life, subject to reasonable limits based on feasibility and practicality.

For proposed actions evaluated in an EIS, Federal agencies typically describe their consideration of the energy requirements of a proposed action and the conservation potential of its alternatives. 40 CFR 1502.16(e). Within this description of energy requirements and conservation opportunities, agencies should evaluate GHG emissions associated with energy use and mitigation opportunities and use this as a point of comparison between reasonable alternatives. For proposals normally evaluated in an EA, agencies may consider the GHG emissions as a factor in discussing alternative uses of available resources. 40 CFR 1508.9(b). CEQ proposes that this analysis should also consider applicable Federal, State or local goals for energy conservation and alternatives for reducing energy demand or GHG emissions associated with energy production.

Where an agency concludes that a discussion of cumulative effects of GHG emissions related to a proposed action is warranted to inform decision-making, CEQ recommends that the agency do so in a manner that meaningfully informs decision makers and the public regarding the potentially significant effects in the context of the proposal for agency action. This would most appropriately focus on an assessment of annual and cumulative emissions of the proposed action and the difference in emissions associated with alternative actions. Agencies may incorporate USGCRP studies and reports by reference in any discussion of GHG emissions and their effects. 40 CFR 1502.21.

Agencies apply the rule of reason to ensure that their discussion pertains to the issues that deserve study and deemphasizes issues that are less useful to the decision regarding the proposal, its alternatives, and mitigation options. 40 CFR 1500.4(f), (g), 1501.7, 1508.25. In addressing GHG emissions, consistent with this proposed guidance, CEQ expects agencies to ensure that such description is commensurate with the importance of the GHG emissions of the proposed action, avoiding useless bulk and boilerplate documentation, so that the NEPA document may concentrate attention on important issues. 40 CFR 1502.5, 1502.24.

An agency may decide that it would be useful to describe GHG emissions in aggregate, as part of a programmatic analysis of agency activities that can be incorporated by reference into subsequent NEPA analyses for individual agency actions. In addition, Federal programs that affect emissions or sinks and proposals regarding long range energy, transportation, and resource management programs lend themselves to a programmatic approach. For example, if GHG emissions or climate change and related effects in general are included in a broad (i.e., programmatic) EIS for a program, subsequent NEPA analyses for actions implementing that program at the project level should, if useful in the NEPA analysis for that decision, tier from the programmatic statement and summarize the relevant issues discussed in the programmatic statement. 40 CFR 1502.20, 1508.28. Such aggregated discussion may be useful under the consideration of agency compliance with requirements for Federal agencies to implement sustainable practices for energy efficiency, GHG emissions avoidance or reduction, petroleum products use reduction, and renewable energy, including bioenergy as well as other required sustainable practices. See, Executive Order 13514 – Federal Leadership in Environmental, Energy, and Economic Performance (74

Fed. Reg. 52117-52127); Executive Order 13423 - Strengthening Federal Environmental, Energy, and Transportation Management (http://nepa.gov/nepa/regs/E.O._13423.pdf). In particular, NEPA analyses for individual actions may incorporate by reference agency Strategic Sustainability Plans and account for GHG effects in accordance with Federal GHG reporting and accounting procedures to the extent that they are applicable to actions that carry out agency obligations under subsections 2(a), (b), (c) and (f) of Executive Order 13514. Such reference to the programmatic accounting of Federal agency GHG emissions under EO 13514 should note where appropriate that the scope of this accounting (for Scope 1, 2 and 3 emissions) may be much broader than the emissions that would be reasonable for assessment within the scope of an individual agency action under NEPA.

To the extent that a federal agency evaluates proposed mitigation of GHG emissions, the quality of that mitigation – including its permanence, verifiability, enforceability, and additionality[3] – should also be carefully evaluated. Among the alternatives that may be considered for their ability to reduce or mitigate GHG emissions are enhanced energy efficiency, lower GHG-emitting technology, renewable energy, planning for carbon capture and sequestration, and capturing or beneficially using fugitive methane emissions. In some cases, such activities are part of the purpose and need for the proposed action and the analysis will provide an assessment, in a comparative manner, of the alternatives and their relative ability to advance those objectives.

III. CONSIDERATION OF CURRENT OR PROJECTED EFFECTS OF CLIMATE CHANGE ON PROPOSALS FOR AGENCY ACTION

CEQ proposes that agencies should determine which climate change impacts warrant consideration in their EAs and EISs because of their impact on the analysis of the environmental effects of a proposed agency action. Through scoping of an environmental document, agencies determine whether climate change considerations warrant emphasis or de-emphasis. 40 CFR 1500.4(g), 1501.7; See Scoping Guidance (CEQ 1981) (http://www.nepa.gov/nepa/regs/scope/scoping.htm) When scoping the impact of climate change on the proposal for agency action, the sensitivity, location, and timeframe of a proposed action will determine the degree to which consideration of these predictions or projections is warranted. As with analysis of any other present or future environment or resource condition, the observed and projected effects of climate change that warrant consideration are most appropriately described as part of the current and future state of the proposed action's "affected environment." 40 CFR 1502.15. Based on that description of climate change effects that warrant consideration, the agency may assess the extent that the effects of the proposal for agency action or its alternatives will add to, modify, or mitigate those effects. Such effects may include, but are not limited to, effects on the environment, on public health and safety, and on vulnerable populations who are more likely to be adversely affected by climate change. The final analysis documents an agency assessment of the effects of the actions considered, including alternatives, on the affected environment.

Climate change can affect the environment of a proposed action in a variety of ways. For instance, climate change can affect the integrity of a development or structure by exposing it to a greater risk of floods, storm surges, or higher temperatures. Climate change can increase the vulnerability of a resource, ecosystem, or human community, causing a proposed action to result in consequences that are more damaging than prior experience with environmental impacts analysis might indicate. For example, an industrial process may draw cumulatively significant amounts of water from a stream that is dwindling because of decreased snow pack in the mountains or add significant heat to a water body that is exposed

[3] Regulatory additionality requirements are designed to ensure that GHG reduction credit is limited to an entity with emission reductions that are above regulatory requirements. See http://www.eia.doe.gov/oiaf/1605/FAQ_GenInfoA.htm#Additionality;

to increasing atmospheric temperatures. Finally, climate change can magnify the damaging strength of certain effects of a proposed action.

Using NEPA's "rule of reason" governing the level of detail in any environmental effects analysis, agencies should ensure that they keep in proportion the extent to which they document their assessment of the effects of climate change. The focus of this analysis should be on the aspects of the environment that are affected by the proposed action and the significance of climate change for those aspects of the affected environment. Agencies should consider the specific effects of the proposed action (including the proposed action's effect on the vulnerability of affected ecosystems), the nexus of those effects with projected climate change effects on the same aspects of our environment, and the implications for the environment to adapt to the projected effects of climate change. The level of detail in the analysis and NEPA documentation of these effects will vary among affected resource values. For example, if a proposed project requires the use of significant quantities of water, changes in water availability associated with climate change may need to be discussed in greater detail than other consequences of climate change. In some cases, discussion of climate change effects in an EA or EIS may warrant a separate section, while in others such discussion may be integrated into the broader discussion of the affected environment.

When assessing the effects of climate change on a proposed action, an agency typically start with an identification of the reasonably foreseeable future condition of the affected environment for the "no action" alternative based on available climate change measurements, statistics, observations, and other evidence. See *Considering Cumulative Effects* (CEQ 1997) at www.nepa.gov. The reasonably foreseeable affected environment should serve as the basis for evaluating and comparing the incremental effects of alternatives. 40 CFR 1502.15. Agencies should be clear about the basis for projecting the changes from the existing environment to the reasonably foreseeable affected environment, including what would happen under this scenario and the probability or likelihood of this future condition. The obligation of an agency to discuss particular effects turns on "a reasonably close causal relationship between the environmental effect and the alleged cause." *Public Citizen*, 541 U.S. at 767. Where climate change effects are likely to be important but there is significant uncertainty about such effects, it may also be useful to consider the effects of any proposed action or its alternatives against a baseline of reasonably foreseeable future conditions that is drawn as distinctly as the science of climate change effects will support.

Climate change effects should be considered in the analysis of projects that are designed for long-term utility and located in areas that are considered vulnerable to specific effects of climate change (such as increasing sea level or ecological change) within the project's timeframe. For example, a proposal for long-term development of transportation infrastructure on a coastal barrier island will likely need to consider whether environmental effects or design parameters may be changed by the projected increase in the rate of sea level rise. See *Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: Gulf Coast Study,* (http://www.globalchange.gov/publications/reports/scientific-assessments/saps/sap4-7), and *Abrupt Climate Change* ((http://www.globalchange.gov/publications/reports/scientific-assessments/saps/sap3-4 (discussing the likelihood of an abrupt change in sea level). Given the length of time involved in present sea level projections, such considerations typically would not be relevant to an action with only short-term considerations.

The process of adaptive planning requires constant learning to reduce uncertainties and improve adaptation outcomes. The CEQ NEPA regulations recognize the value of monitoring to assure that decisions are carried out as provided in a Record of Decision. 40 CFR 1505.3. In cases where adaptation to the effects of climate change is important, the significant aspects of these changes should be identified in the agency's final decision and adoption of a monitoring program should be considered. Monitoring

strategies should be modified as more information becomes available and best practices and other experiences are shared.

For sources of the best scientific information available on the reasonably foreseeable climate change impacts, Federal agencies may summarize and incorporate by reference the Synthesis and Assessment Products of the U.S. Global Change Research Program (USGCRP, http://www.globalchange.gov/publications/reports/scientific-assessments/saps), and other major peer-reviewed assessments from USGCRP . Particularly relevant is the report on climate change impacts on water resources, ecosystems, agriculture and forestry, health, coastlines and arctic regions in the United States. *Global Climate Change Impacts in the United States* (http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts). Research on climate change impacts is an emerging and rapidly evolving area of science. In accordance with NEPA's rule of reason and standards for obtaining information regarding reasonably foreseeable significant adverse effects on the human environment, action agencies need not undertake exorbitant research or analysis of projected climate change impacts in the project area or on the project itself, but may instead summarize and incorporate by reference the relevant scientific literature. See, e.g., 40 CFR 1502.21, 1502.22. Where agencies consider climate change modeling to be applicable to their NEPA analysis, agencies should consider the uncertainties associated with long-term projections from global and regional climate change models. There are limitations and variability in the capacity of climate models to reliably project potential changes at the regional, local, or project level, so agencies should disclose these limitations in explaining the extent to which they rely on particular studies or projections. 40 CFR 1502.21, 1502.22. The outputs of coarse-resolution global climate models, commonly used to project climate change scenarios at a continental or regional scale, require downscaling and bias removal (i.e., the adjustment of future projections for known systematic model errors) before they can be used in regional or local impact studies. See *Climate Models: An Assessment of Strengths and Limitations.* (http://www.globalchange.gov/publications/reports/scientific-assessments/saps/sap3-1).

Agencies should also consider the particular impacts of climate change on vulnerable communities where this may affect the design of the action or the selection among alternatives. Tribal and Alaska Native communities that maintain their close relationship with the cycles of nature have observed the changes that are already underway, including the melting of permafrost in Alaska, disappearance of important species of trees, shifting migration patterns of elk and fish, and the drying of lakes and rivers. These effects affect the survival for both their livelihood and their culture. Further, sovereign tribal governments with legal rights to reservations and trust resources are affected by ecological changes on the landscape in ways that many Americans are not.

IV. BACKGROUND

1. NEPA and Cumulative Effects in General

NEPA was enacted to, *inter alia,* "promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man." NEPA Section 2, 42 U.S.C. § 4321. NEPA is best known for its action-forcing requirement that "all agencies of the federal government shall . . . include in every recommendation or report on . . . major federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on –

(i) the environmental impact of the proposed action,
(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
(iii) alternatives to the proposed action,
(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented."

NEPA Section 102(2) (C), 42 U.S.C. § 4332(2) (C). This information must be provided for review by agencies with jurisdiction or special expertise regarding the environmental effects described. The agency's "detailed statement," known as an EIS, must be provided to the public, in accordance with NEPA Section 102(2)(C) and the Freedom of Information Act, and be incorporated into the agency decision-making process.

The EIS requirement thus has two purposes. First, it is meant to promote transparency and to ensure public accountability of agency decisions with significant environmental effects. In this sense, it promotes political checks and balances broader public interests against the motivations for agency action. Second, it is meant to ensure that agencies take account of those effects before decisions are made and as part of the agency's own decision-making process. In this sense, it attempts to ensure that agencies consider environmental consequences as they decide how to proceed and take steps, when appropriate, to eliminate or mitigate adverse effects. The agency's "responsibility is not simply to sit back, like an umpire, and resolve adversary contentions . . . Rather, it must itself take the initiative of considering environmental values at every distinctive and comprehensive stage of the process beyond the staff's evaluation and recommendation." *Calvert Cliffs Coordinating Comm., Inc. v. US Atomic Energy Comm'n*, 449 F.2d 1109, 1119 (D.C. Cir. 1971).

Alternatives analysis is an essential element of the NEPA process, both under section 102(2) (C) and in the EA of "conflicts concerning alternative uses of available resources" under Section 102(2) (E). The requirement of consideration of alternatives is meant to ensure that the agency consider approaches whose adverse environmental effects will be insignificant or at least less significant than those of the proposal. "This requirement, like the 'detailed statement' requirement, seeks to ensure that each agency decision maker has before him and takes into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance. Only in that fashion is it likely that the most intelligent, optimally beneficial decision will ultimately be made." *Calvert Cliffs*, 449 F.2d at 1114.

NEPA analysis and documentation should be designed to both inform Federal agency decisions and provide for collaborative, coordinated decisions by making "advice and information useful in restoring, maintaining, and enhancing the quality of the environment" available to States, Tribes, counties, cities, institutions and individuals. Section 102(2) (G), 42 U.S.C. § 4332(2) (G). NEPA also requires Federal agencies to support international cooperation by recognizing "the global character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment." Section 102(2) (F), 42 U.S.C. § 4332(2) (F).

Federal actions may cause effects on the human environment that are not significant environment effects, in isolation, but that are significant in the aggregate or that will lead to significant effects. Since 1970, CEQ has construed the term "major Federal actions significantly affecting the quality of the human environment" as requiring the consideration of the "overall, cumulative impact of the action proposed (and of further actions contemplated)." 35 Fed. Reg. 7390, 7391 (1970). "Cumulative impact" is defined in CEQ's NEPA regulations as the "impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . ." 40 C.F.R. § 1508.7. Cf. *Kleppe v. Sierra Club*, 427 U.S. 390, 413-414 (1976). CEQ interprets this regulation as referring only to the cumulative impact of the direct and indirect effects of the proposed action or its alternatives when added to the aggregate effects of past, present, and reasonably foreseeable future

actions. See, CEQ Guidance on the Consideration of Past Actions in Cumulative Effects Analysis (June 24, 2005) at 2, 3 (www.nepa.gov/nepa/regs/Guidance_on_CE.pdf).

As explained in prior CEQ guidance, and described in its handbook *Considering Cumulative Effects,* the analysis of cumulative effects begins with consideration of the direct and indirect effects on the environment that are expected or likely to result from a proposal for agency action or its reasonable alternatives. See *Considering Cumulative Effects* (CEQ 1997) at www.nepa.gov. Agencies then should consider the affected environment by looking for effects of past, present, and reasonably foreseeable future actions that are, in the judgment of the agency, relevant because their effects would increase or change in combination with the direct and indirect effects of the proposal for agency action or its alternatives. The relevant cumulative effects typically result from human activities with effects that accumulate within the temporal and geographic boundaries of the effects of the proposed action.

The purpose of cumulative effects analysis is to document agency consideration of the context and intensity of the effects of a proposal for agency action, particularly whether the action is related to other actions with individually insignificant but cumulatively significant impacts. 40 CFR 1508.27(b)(7). After such documentation, the dual purposes of NEPA will be satisfied. The public can scrutinize the relevant effects, and the agency, having been made alert to them, can decide how to proceed. The Supreme Court has emphasized that agencies may properly limit the scope of their cumulative effects analysis based on practical considerations. *Kleppe*, 427 U.S at 414 ("Even if environmental interrelationships could be shown conclusively to extend across basins and drainage areas, practical considerations of feasibility might well necessitate restricting the scope of comprehensive statements"). See also 40 CFR 1502.22 (regarding acquisition and disclosure of information that is "relevant to reasonably foreseeable significant adverse impacts" and "essential to a reasoned choice among alternatives").

2. Climate Change in General.

The science of climate change is rapidly developing, and is only briefly summarized in this guidance to illustrate the sources of scientific information that are presently available for consideration. CEQ's first Annual Report in 1970 discussed climate change, concluding that "man may be changing his weather." Environmental Quality: The First Annual Report at 93. At that time, human activities had increased the mean level of atmospheric carbon dioxide to 325 parts per million (ppm). Since 1970, the concentration of atmospheric carbon dioxide has increased at a rate of about 1.6 ppm per year (1979-2008) to the present level of approximately 385 ppm (2008 globally averaged value). *See* U.S. Department of Commerce, National Oceanic and Atmospheric Administration Earth Systems Research Laboratory (http://www.esrl.noaa.gov/gmd/ccgg/trends/). The atmospheric concentrations of other, more potent GHGs have also increased to levels that far exceed their levels in 1750, at the beginning of the industrial era. As of 2004, human activities annually produced more than 49 billion tons of GHG measured in carbon dioxide equivalency according to the Intergovernmental Panel on Climate Change (IPCC). IPCC Fourth Assessment Report: Synthesis Report at 38 (http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf). Nearly every aspect of energy choices and use affect the development of fossil fuel and other energy resources, either adding to or reducing the cumulative total of GHG emissions.

It is now well established that rising global GHG emissions are significantly affecting the Earth's climate. These conclusions are built upon a scientific record that has been created with substantial contributions from the United States' Global Change Research Program (formerly the Climate Change Science Program), which facilitates the creation and application of knowledge of the Earth's global environment through research, observations, decision support, and communication. (http://www.globalchange.gov/)

Based primarily on the scientific assessments of the USGCRP and NRC, EPA has issued a finding that the changes in our climate caused by GHG emissions endanger public health and welfare. (Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, December 15, 2009, 74 Fed. Reg. 66496). Ambient concentrations of GHGs do not cause direct adverse health effects (such as respiratory or toxic effects), but public health risks and impacts as a result of elevated atmospheric concentrations of GHGs occur via climate change. 74 Fed. Reg. at 66497-98. For example, EPA has estimated that climate change can exacerbate tropospheric ozone levels in some parts of the U.S. Broadly, EPA states that the effects of climate change observed to date and projected to occur in the future include, but are not limited to, more frequent and intense heat waves, more severe wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea-level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems. The Administrator has determined that these impacts are effects on public health and welfare within the meaning of the Clean Air Act. However, the Administrator does not currently believe that it is possible to quantify with great specificity (i.e. geographic), the various health effects from climate change but, because the risks from unusually hot days and nights and from heat waves are very serious, has proposed to find that on balance that these risks support a finding that public health is endangered even if it is also possible that modest temperature increases will have some beneficial health effects. The EPA findings cite IPCC reports that climate change impacts on human health in U.S. cities will be compounded by population growth and an aging population and GCRP reports that climate change has the potential to accentuate the disparities already evident in the American health care systems as many of the expected health effects are likely to fall disproportionately on the poor, the elderly, the disabled, and the uninsured.

V. CONCLUSION

With the purpose of informing decision-making, CEQ proposes that the NEPA process should incorporate consideration of both the impact of an agency action on the environment through the mechanism of GHG emissions and the impact of changing climate on that agency action. This is not intended as a "new" component of NEPA analysis, but rather as a potentially important factor to be considered within the existing NEPA framework. Where an agency determines that an assessment of climate issues is appropriate, the agency should identity alternative actions that are both adapted to anticipated climate change impacts and mitigate the GHG emissions that cause climate change. As noted above, NEPA analysis of climate change issues necessarily will evolve to reflect the scientific information available and the legal and policy context of decisions that the NEPA process is intended to inform. Therefore, once this guidance is issued in final form, CEQ intends to revise it as warranted to reflect developments in the law, policy, and science regarding climate change.

VI. SPECIFIC QUESTIONS FOR PUBLIC REVIEW

In addition to comments on this draft guidance document, CEQ also requests comment on land and resource management issues, including:

1. How should NEPA documents regarding long-range energy and resource management programs assess GHG emissions and climate change impacts?
2. What should be included in specific NEPA guidance for projects applicable to the federal land management agencies?
3. What should be included in specific NEPA guidance for land management planning applicable to the federal land management agencies?
4. Should CEQ recommend any particular protocols for assessing land management practices and their effect on carbon release and sequestration?

5. How should uncertainties associated with climate change projections and species and ecosystem responses be addressed in protocols for assessing land management practices?
6. How should NEPA analyses be tailored to address the beneficial effects on GHG emissions of Federal land and resource management actions?
7. Should CEQ provide guidance to agencies on determining whether GHG emissions are "significant" for NEPA purposes. At what level should GHG emissions be considered to have significant cumulative effects. In this context, commenters may wish to consider the Supreme Court decision in *Massachusetts v. EPA,* 549 U.S. 497, 524 (2007).

After consideration of public comment, CEQ intends to expeditiously issue this guidance in final form. In the meantime, CEQ does not intend this guidance to become effective until its issuance in final form.

# # #

Defenders of Wildlife
Natural Resources Defense Council
Sierra Club
The Wilderness Society

August 31, 2010

Greg Thomsen
Bureau of Land Management
California Desert District
22835 Calle San Juan de Los Lagos
Moreno Valley, CA 92553

Via email: lucernesolar@blm.gov

Re: Final Environmental Impact Statement and Proposed California Desert Conservation Area Plan Amendment for the Proposed Chevron Energy Solutions Lucerne Valley Solar Project

Dear Mr. Thomsen:

This letter constitutes the comments of Defenders of Wildlife, Natural Resources Defense Council (NRDC), Sierra Club and The Wilderness Society on the above-captioned proposed amendment to the California Desert Conservation Area (CDCA) Plan and accompanying final environmental impact statement (EIS). These commenting organizations are national environmental membership organizations with long histories of efforts to protect the lands and resources under the jurisdiction of the Bureau of Land Management (BLM), including those within the CDCA. These organizations strongly support the development of renewable energy to reduce greenhouse gas emissions, avoid the worst consequences of global warming and assist California in meeting its emission reduction goals. In addition, however, as we stressed in our comments on the draft EIS for this amendment and project, we believe that renewable energy development must be done right and in full compliance with applicable environmental laws. We are pleased to support the proposed project, as modified by the BLM in the final EIS and we urge that the agency proceed as swiftly as possible to issue its Record of Decision and approval of the Right of Way application.

This project, unlike some of the others that the BLM is currently in the process of reviewing, is located in an already fragmented area. The site is close to existing roads, infrastructure and transmission lines, and has low wildlife values. Rather than be located in high value, intact desert habitat on lands classified by BLM as L, as are several pending renewable projects, or a special management area, it is within a designated development corridor. While approval and construction of this project will have environmental impacts, as the EIS reveals, it will also have significant benefits including electrical energy produced without the greenhouse gas pollution that comes from fossil-fueled power plants or the lethal radioactive waste that comes from nuclear power plants, jobs for local residents and substantial contributions to the local economy.

Our organizations have never before supported construction of a power plant. This first-ever step by us is based on our recognition of the need to achieve a balance between meeting our clean energy needs and protecting our sensitive public lands. This project strikes that balance and we urge the BLM to move expeditiously to grant final approval of Alternative 4, the Modified Site Layout, and the proposed amendment to the CDCA plan.

Thank you in advance for considering these comments and for your swift approval of this project.

Sincerely,

Johanna Wald
NRDC

Kim Delfino
Defenders of Wildlife

Barbara Boyle
Sierra Club

Alice Bond
The Wilderness Society

cc: Jim Abbott, Acting State BLM Director, via email
Steve Black, Senior Counselor to the Interior Secretary, via email

<rick@ricksayers.com>
09/12/2010 06:47 AM
To: lucernesolar@blm.gov
Cc:
Subject: No solar fields in Lucerne

I live in the Homestead Valley area of San Bernardino. I have not spoke to one person who is in favor of lining our beautiful wilderness desert areas with solar energy fields. We realize these projects were part of backroom political deals made in Washington and Sacramento. We do not appreciate being the brunt of politicians jockeying in an election year by elected officials trying to be a 'Green' candidate.
My neighbors and I are in favor of rooftop solar not tearing up hundreds of acres of the desert wilderness.

Sincerely,

Rick Sayers