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April 22, 2021

Tom Nievez, Planner
County of San Bernardino
Land Use Services Department
385 N. Arrowhead Avenue, 1st Floor
San Bernardino, CA 92415-0182 Sent by email Tom.Nievez@lus.sbcounty.gov

Subject: The Initial Study of Solar 66 is incomplete without an analysis of cumulative impacts. The project requires an EIR. Project # 2020-00144/P201800521; APN 0516-001-04, 0516-012-02

Dear Mr. Nievez:

The mission of the Morongo Basin Conservation Association, a 501(c)3 non-profit, community based, all volunteer organization, includes the objective to preserve the economic and environmental welfare of our rural desert communities against exploitation deemed not in the residents' best interest. We take this opportunity to provide comments on the Initial Study for the proposed Solar 66 Project, a 7.9-Megawatt photovoltaic solar power generating facility with battery storage capabilities on approximately 36 acres of the 142-acre project site in the community of Daggett.

Our review of the Initial Study (IS) finds the evaluations of the aesthetics, air quality, biological resources, geology and soils, and transportation elements incomplete including the failure to analyze cumulative impacts with current and future solar projects in the area and region. The proposed project may have a significant effect on the environment, regardless of agreed upon mitigation measures, and an Environmental Impact Report is required.

1. Project Site Location is Incompletely Described

The description of the site states "The Mojave River dry riverbed occupies the northeastern portion of the property." This description is incomplete and should also include the following important change of risk. On November 1, 2019, the Army Corps of Engineers issued a news release announcing the changed Mojave River Dam's risk characterization from low to high urgency.

> "The change was the result of recent risk assessment findings that during an extreme flood event, water could exceed the design capacity of the dam and overtop it. **This could potentially result in dam failure, flooding the communities of Hesperia, Apple Valley, Victorville, and Barstow, located adjacent to the Mojave River. Floor waters could also reach Baker, more than 140 miles downstream of the dam."**[1] Although the river is known to run underground much of its length, hence its common name "the upside-down river" historical records of flooding between 1990 – 2010 show three flood events with a magnitude approaching 25,000 cubic feet per second. There were many higher events during prior decades. (Figure 1) (Bold added)

[1] https://www.spl.usace.army.mil/Media/News-Releases/Article/2006597/army-corps-reclassifies-mojave-river-dam-risk-characterization/ accessed 4/18/21/

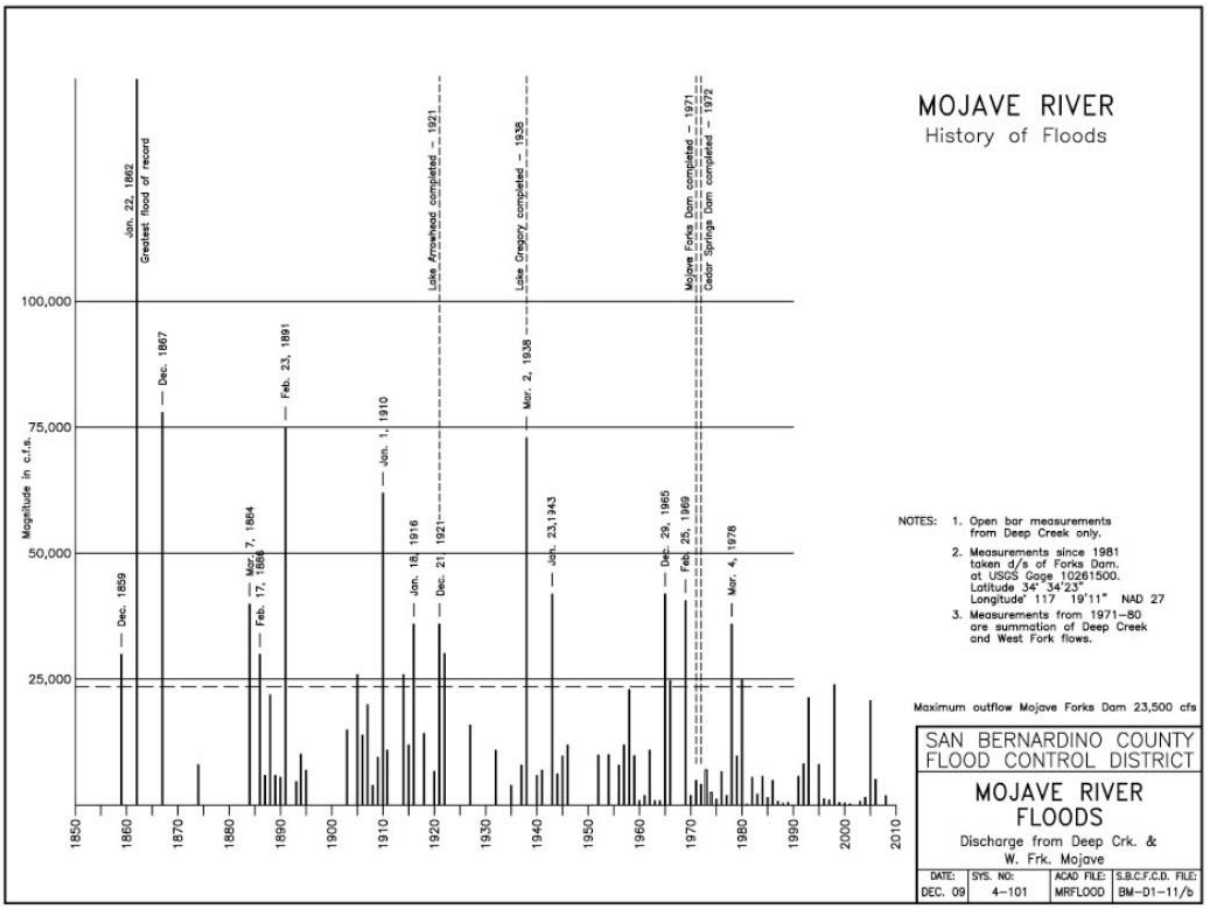

Figure 1: Chart of Historical Mojave Floods
https://cms.sbcounty.gov/Portals/50/floodcontrol/mojavechartrevised.pdf

Figure 2: Feb. 23, 2005 The Mojave River from Daggett Rd. looking southeast during a flood event.

2. Aesthetics - Fails to Adequately Evaluate the Project Site

IS I Aesthetics

Would the project

a) Have a substantial adverse effect on a scenic vista?

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings?

Yes, the Solar 66 would have a substantial adverse effect on this scenic vista. The 35 acres of solar panels would jut through the vision line crossing the unobstructed mile wide basin connecting Rattlesnake Mountain to the north with the foothills of Daggett Ridge to the south. The public view within this visually unobstructed pass east of Barstow would be degraded. This pass is the open door for the east bound traveler leaving urban Barstow with a sigh of expectation. This pass is the west end portal for travelers leaving the wide-open multi-state, sparsely populated Basin and Range Province. With the completion of the aesthetic destroying 3500-acre Daggett Solar Project six miles to the east of the Project, this portal provides the last breath of open space.

Figure 3: The scenic pass connecting Rattlesnake Mountain with the foothills of the Daggett Ridge.

d) Create a new source of substantial glare.

The Substantiation refers to the ordinances regulating Sign Regulations and Glare and Outdoor Lighting Desert Region. What is not discussed, but which is of real concern for resident and migratory birds, is the **Lake Effect** – the outward glare during the day or night from the mirrored

panels that from a distance resembles water. The lake effect will be discussed under IV Biological Resources d).

3. Air Quality- Cumulative PM10 and PM2.5 Hazard

IS III Air Quality

Would the project

a) Increase in criteria pollutants PM10 and PM2.5.
b) Exposure of sensitive receptors to substantial pollutant concentrations

This Project and the 3500-acre Daggett Project could lead to a cumulatively considerable net increase in PM10 and PM2.5 and expose downwind sensitive receptors to substantial pollutant concentrations. There are no EPA approved dust monitors on site to measure base level blows of either project or follow the projects as they progress through construction, operation, and restoration. The Mojave Desert Air Quality Management District (MDAQMD) relies on phone calls from observers for monitoring. Travelling into the dust to determine the point source and find the phone number tacked to the Project fence on the large sign can be hazardous to the observer's health. Residents in Newberry Springs have provided photographs of dust blows following disturbance. The pictures below, (Figures 4 and 5) were safely taken from Newberry Mountain foothills. The dust, from the unspecified source, obviously exceeds emission thresholds and travels great distances. Both the 3500-acre Daggett Solar and Solar 66 (if approved) will be in construction and operation either concurrently or close to concurrently. They will be operational concurrently.

Figure 4: April 6, 2018 looking north across Mojave River Valley (MRV). Dust starts west of the airport

Figure 5: and travels east through Newberry Springs more than 8 miles distant.

Currently the Project site is stabilized by native vegetation. The stabilizing roots of the vegetation will be graded during construction. If the plants are mowed both their roots and the functional biological soil crust are harmed or destroyed by the heavy mower tires and planting of the panel support poles. The watering mitigation measure has no proven history of working but for brief periods of time. Nor can downwind sensitive receptors depend on watering during operations and restoration when manpower is absent. The gravel mitigation measure, if it follows the Owens Dry Lake model, would be 4 inches thick and could work.

This writer is downwind of the dust released by 3 solar projects in the Joshua Tree-Twentynine Palms area.

Newberry Springs residents have been living with the dust from the 22-acre Stace (formerly Soitec) Solar site since 2005 without the requested fugitive dust enforcement from the County.

Figure 6: Stace Solar site dust blowing from west to east onto the residence of Mona Doles.

In Newberry Springs, and just recently Daggett, Yermo, and points east MDAQMD has installed Purple Air (PA) Monitors that detect PM2.5 and PM10. There are also PA monitors on private residences. Although the monitors are not EPA approved for regulation, they are considered accurate. The monitors can be accessed in real time on the Purple Air website.

https://www.purpleair.com/map?opt=1/ls/mPM25/a10/cC0#10.77/34.8252/-116.9199/0/8

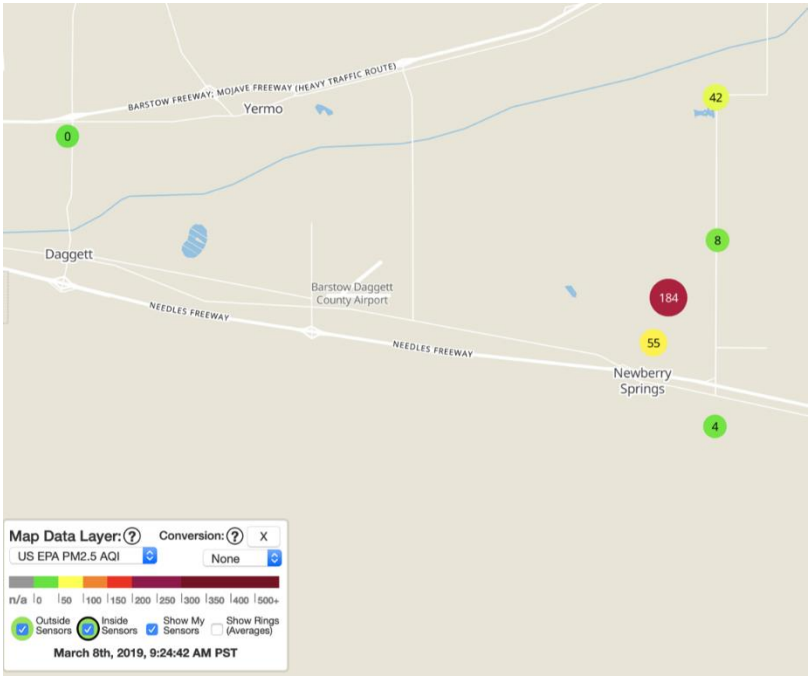

Figure 7: Purple Air monitor PM2.5 reading of 184 (red Health alert) at Mona Doles residence across the street from Stace Solar.

Figure 8: Handheld Temtop Monitor showing the PM10 reading of 364 (red Health Alert) inside a car driving along Mountain View Rd. through the dust event from Stace Solar on July 2018. See Figure 6.

4. Geology and Soils must be considered when determining air quality mitigation measures.

VII Geology and Soils

Would the project

c) result in substantial soil erosion of the loss of topsoil?

YES, there would be potentially significant impacts if the characteristics of the soil units are ignored during the planning process.

The IS (page 22) gives a grade of "Less Than Significant Impact" because the water erosion on the near surface sandy soils can be mitigated. There is no evaluation for wind erosion. Solar 66 is on the same soil unit as the Stace Project: 112 – Cajon Sand 0-2% Slope. The Natural Resource Conservation Service describes the hazard of water erosion as slight but, **the hazard of soil blowing is high**.[2] This is no surprise since the area between the I-15 and I-40 east of Barstow, the Lower Mojave River Valley, (LMRV) is basically the outwash plain for the Mojave River sediments.

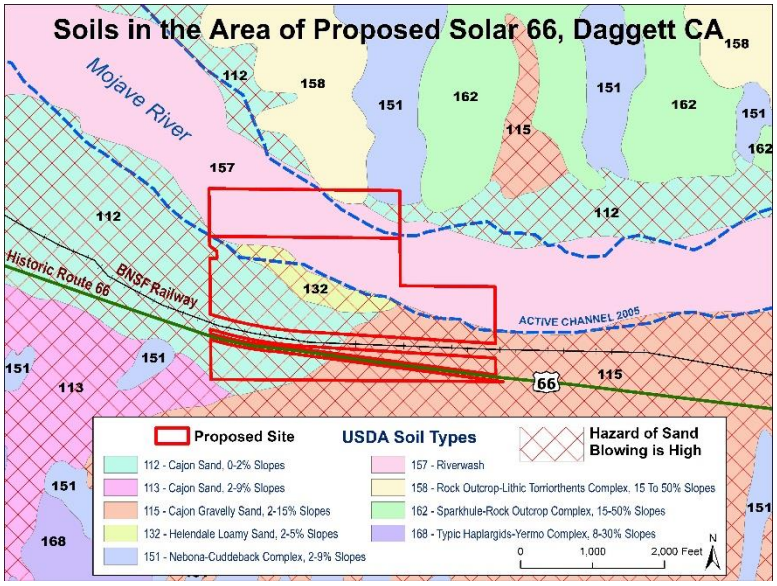

Figure 9: Soils in the Area of Proposed Solar 66, Daggett CA.

Soil unit 112 Cajon Sand is also a dominant unit supporting the 3,500-acre Daggett Solar Project

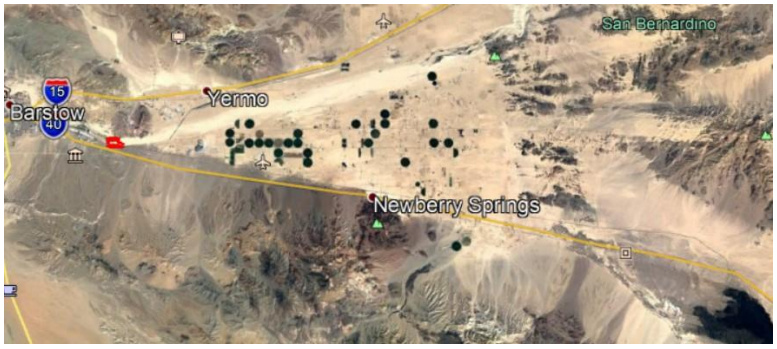

Figure 10: Lower Mojave River Valley showing sand transport paths into the Cady Mountains.

The linear sand dunes fingering into the Cady Mountains at the east end of the LMRV demonstrate the hazard of blowing sand in the area. Please refer to the attached research paper by Julie Laity "Aeolian Destabilization Along the Mojave River, Mojave Desert, California: Linkages Among Fluvial, Groundwater, And Aeolian Systems" and add to the County Planning Reference Library.

The foundational study on Sand Transport Paths in the Mojave Desert by James Zimbelman is attached. Please add to the County Planning Reference Library.

[2] https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/CA671/0/sanbernardino.pdf

5. Dust Analysis Fails Sensitive Receptors

IS III Air Quality

Would the project

c) Expose sensitive receptors to substantial pollutant concentrations. Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. There are no sensitive receptors within 500 feet of the Project site.

Where does the protective distance of 500 feet come from? There will be blowing dust from ground disturbance of the combined Solar 66 site and the 3,500-acre Daggett Solar site. Please refer to Figures 4 and 5 which demonstrate the dust blowing distance of 8 miles. Then let your eyes rest on Figure 10 where 30 miles is still conservative.

Fencing may protect from blowing sand but is no protection from blowing dust.

Please add the Science Advances December 2018 peer reviewed article "The mysterious long-range transport of giant mineral dust particles" by Michelle van der Does [3] to the County Planning Reference Library so this dangerous misjudgment is not made in the analysis of future projects. Solar 66 is cumulative with the Daggett Solar Project and will directly impact sensitive receptors in Daggett and Newberry Springs.

6. Dust Analysis Fails the Transportation Corridors

Extreme wind events are common in the LMRV and there is risk that with the removal of vegetation from the Projects sites, that dust during such an event could lower visibility and endanger motorists on National Trails Highway and even the I-40. The Railroad trains are not endangered.

7. Cumulative Impacts on Wildlife Corridors

IV Biological Resources

Would the project

d) Interfere substantially with the movement of any species or with established native resident of migratory wildlife corridors or impeded the use of native wildlife nursery sites.

The Lake Effect

The lake Effect refers to a solar field giving the appearance of a body of water whether during the day or at night. At night the panels are stowed face up and reflect the light from the moon or stars.

[3] Soil Survey of San Bernardino County, California, Mojave River Area https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6291315/

Figure 11: Lake Effect

Black-throated sparrow considering the wisdom of a drink from the Cascade Solar Project in Joshua Tree Basin.

In 1982-1983 the author of these comments, Pat Flanagan, was field staff searching for dead and injured birds at Solar One in Daggett CA., the world's then largest solar energy power plant. Adjacent to Solar One were large cooling ponds that could have thousands of migratory birds lounging and feeding at one time. This study was reported in the attached paper

Avian Mortality at a Solar Energy Power Plant by Michael D. McCrary, Robert McKernan et.al.
The Discussion (page 138) is instructive on the lake effect.

> "Creosote bush scrub, which characterizes much of the undisturbed portions of the Mojave Desert near Solar One, is usually only sparsely inhabited by birds. The avian community of similar habitat in Arizona is usually less than 20 species. However, we recorded 107 species in the vicinity of Solar One, 15 of which breed in the area. The special attraction of Solar One to birds is most likely related to the presence of a large, man-made water impoundment and irrigated agricultural fields, both of which produce an abundance of insects. Naturally occurring open water sources in the Mojave Desert are rare and usually ephemeral, while the man-made ponds near Solar One are permanent.
>
> The most frequent form of avian mortality at Solar One during this study was from collisions with structures, primarily heliostats. Avian collisions are an inevitable by-product of almost all man-made structures. Reflective surfaces are especially prone to collisions, and it is not surprising that collisions with mirrored heliostats occur on a somewhat regular basis considering the reflective surface area of Solar One. "

Please refer to the American Bird Conservancy 2019 Position Paper on Solar Energy. (Attached)

> Summary: Large commercial solar arrays seem to be cropping up everywhere. However, solar energy development has the potential to harm birds, both through the so-called "lake effect" and through incineration.

The most practical method to determine the bird species in the cumulative areas of the Solar 66 and Daggett Solar Projects is to consult eBird, the Cornell University citizen-science website tabulating birds worldwide. https://ebird.org/hotspots

Depending on the time of day or the phase of the moon the two solar projects will be just other ponds for birds to stop at for a rest and snack on the way to or from the troubled Salton Sea.

Figure 12: eBird Hotspots in the vicinity of Daggett Solar and Solar 66 Projects.

1 Harper Dry Lake	293 species	2 Barstow Community College	114 species
3 Barstow WTP	161 species	4 Tees & Trees	157 species
5 Daggett Evaporation Ponds	150 species		

Wildlife Corridors include both migratory bird pathways and movement and living habitat for animal species. As you are aware, the corridors are connective for species and become increasingly important as climate changes progresses and environments shift.

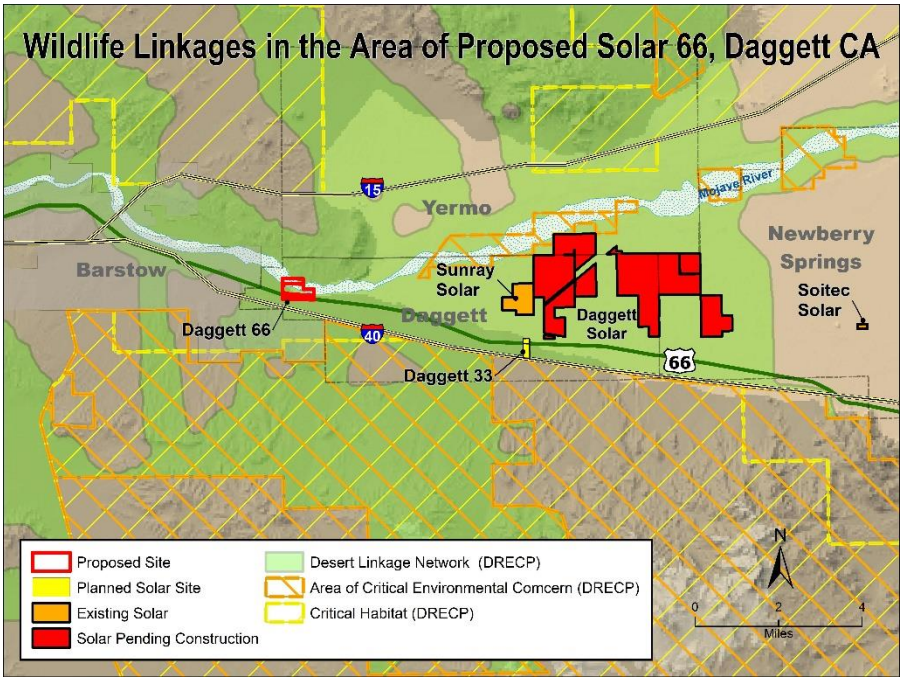

Figure 13: Wildlife linkages LMRV area of the Daggett Projects.

The linkages are connecting the BLM ACECs and DRECP critical habitats.

Solar 66 clogs the narrow pass connecting the foothills of Daggett Ridge with Rattlesnake Mountain. Mitigation of this obstruction would take some serious design modifications of the project. Fixed tilt panels and fencing passable for animals was used at Dhamma Vaddhana Vipassana Meditation Center on Mantonya Rd. in Twentynine Palms. The Daggett Solar project and Sunray take up the space south of the LMRV crossing. There are cumulative wildlife linkages problems to solve here and they are completely overlooked in the IS.

Invasive Species

Removal of native vegetation is an open invitation for invasive species. This will be a serious problem with the 3500-acre Daggett project and also with the 36-acre Solar 66 site. The ringing bell is the existing 333-acre Sunray project adjacent to the Daggett Project. Photographs from 2018 show Russian thistle confined behind the fence and piled in front of the fence. The area was recently checked and the diligent owner has cleaned it up and kept it clean. However, the pictures are a reminder that the threat of invasives remains without diligence.

Figure 14: Russian thistle trapped behind the fence surrounding Sunray Solar and in front of the fence.

Earthquake Fault Zone

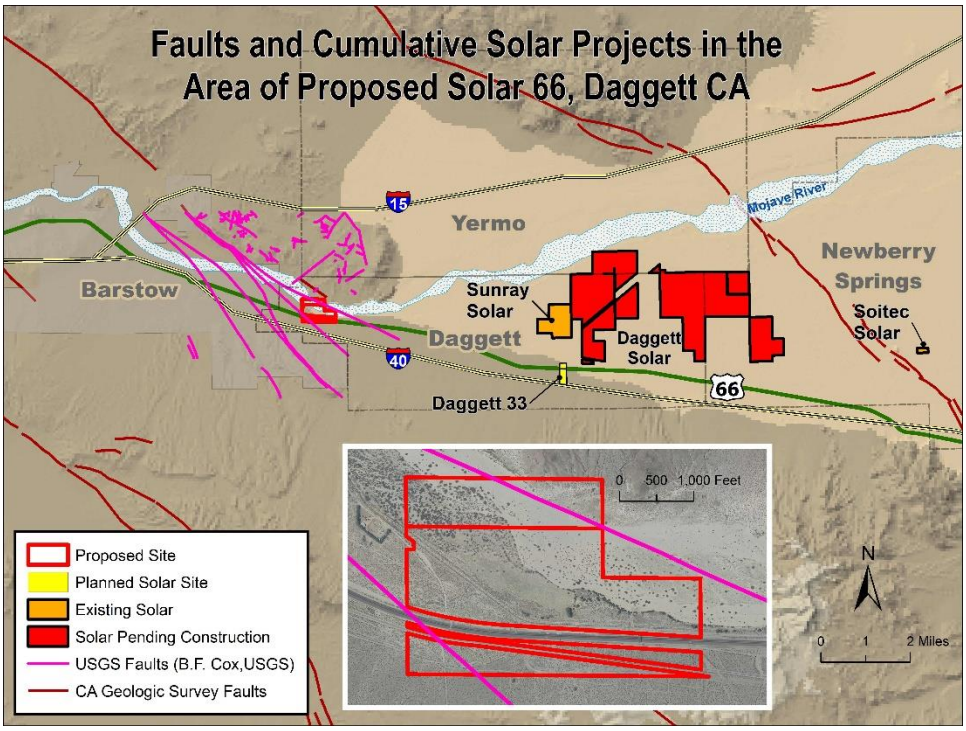

Figure 15: The IS (page 22-23) dismisses the dangers from being located on an "official earthquake fault zone or within a mile of a mapped fault." We urge County Planning to check the accuracy of the Geotechnical Study since it appears in error regarding the mapped USGS and CA Geologic Survey faults.

Thank you for this opportunity to comment of the Daggett 66. For your convenience I have attached the following papers referenced in my comments.

Julie Laity (2003) Aeolian Destabilization Along the Mojave River, Mojave Desert, California: Linkages Among Fluvial, Groundwater, and Aeolian Systems, Physical Geography, 24:3, 196-221

Michael D. McCrary, Robert L. McKernan, Ralph W. Schreiber, William D. Wagner, Terry C. Sciarrotta. (1986) Avian Mortality At A solar Energy Plant. Journal of Field Ornithology, Vol. 57, No. 2. Pages 135-141.

James R. Zimbelman, Steven H. Williams, and Vatche. P. Tchakerian. Sand Transport Paths in the Mojave Desert, Southwestern United States. *Desert Aeolian Processes*. Edited by Vatche P. Tchakerian. Published in 1995 by Chapman & Hall, London.

American Bird Conservancy (2019) Position Paper Solar Energy

News Release: Army Corps reclassifies Mojave River Dam risk characterization. November 1, 2019

Sincerely,

Pat Flanagan, Board Member, for the
Morongo Basin Conservation Association

CC:
Lynna Monell COB@sbcounty.gov for distribution to
Col. Paul Cook (Ret.) 1st District Supervisor
Janice Rutherford 2nd District Supervisor
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