

APPENDIX L.1

Public Comment, Responses, and Revisions to the Draft Resource Management Plan Amendment/Draft Environmental Impact Statement



U.S. Department of the Interior
Bureau of Land Management

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GEMINI SOLAR PROJECT

Appendix L: Public Comment, Responses, and Revisions to the Draft Resource Management Plan Amendment/Draft Environmental Impact Statement

December 2019



The Bureau of Land Management is responsible for the stewardship of our public lands. The BLM's mission is to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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List of Acronyms and Abbreviations

1998 LVRMP 1998 Las Vegas Resource Management Plan

ABMMP	Avian and Bat Monitoring and Management Plan
ACEC	Area of Critical Environmental Concern
APE	Area of Potential Effects
Applicant	Solar Partners, XI, LLC
AQ	Air Quality
AQRs	Air Quality Regulations
ARRA	American Recovery and Reinvestment Act of 2009
BBCS	Bird and Bat Conservation Strategy
BLM	Bureau of Land Management
BMPs	best management practices
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CHU	Critical Habitat Unit
cms	cubic meter per second
CO ₂ e	units of equivalent carbon dioxide
COC	Energy Corridor of Concern
CR	Cultural Resources
CRIT	Colorado River Indian Tribe
CWA	Clean Water Act
DOI	Department of the Interior
EO	Executive Order
ERMA	extensive recreation management area

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ES	Executive Summary
ESA	Endangered Species Act of 1973
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FLPMA	Federal Land Policy and Management Act of 1976
gen-tie	generation-tie lines
GHG	greenhouse gas
GPS	global positioning system
GS	Geology and Soils
HP	California Crossing High Potential
HPRSEG	High Potential Route Segment
HPTP	Historic Properties Treatment Plan
I-15	Interstate 15
IPP DC Line	Intermountain Power Project Direct Current Line
ISEGS	Ivanpah Solar Electric Generating System
KOPs	key observation point
kV	kilovolt
LOS	Level of Service
LU	Land Use
LWRFS	Lower White River Flow System
MCL	mean carapace length
MM	Mitigation Measure
MOA	Memorandum of Agreement
MSHCP	Multi-Species Habitat Conservation Plan
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NDEP	Nevada Division of Environmental Protection

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NDOT	Nevada Department of Transportation
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NGO	Non-governmental organization
NHPA	National Historic Preservation Act of 1966
NHT	National Historic Trail
NNHP	Nevada Natural Heritage Program
NNPS	Nevada Native Plant Society
NO ₂	nitrogen dioxide
NOA	Notice of Availability
NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes
NTP	Notice to Proceed
NWP	Nation Wide Permit
NWR	National Wildlife Range
O&M	operations and maintenance
OHV	off-highway vehicle
OSNHT	Old Spanish National Historic Trail
OSTA	Old Spanish Trail Association
PCN	Pre-Construction Notification
PCS	power conversion station
PEIS	Programmatic Environmental Impact Statement
PFYC	Potential Fossil Yield Classification
PM	particulate matter
POD	Plan of Development
PRMMP	Paleontological Resources Monitoring and Mitigation Plan
PS	Public Services

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PUP	Pesticide Use Proposal
PV	photovoltaic
qPCR	Quantitative Polymerase Chain Reaction
RCB	reinforced concrete boxes
REC	Recreation
RFCD	Regional Flood Control District
RMP	Resource Management Plan
RMPA/EIS	Resource Management Plan Amendment/ Environmental Impact Statement
RMS	Regional Mitigation Strategy
ROD	Record of Decision
ROW	rights-of-way
SAAQS	state ambient air quality standards
SEZ	Solar Energy Zone
SHPO	State Historic Preservation Office
SNIP	Southern Nevada Intertie Project
SO	Secretarial Order
Solar PEIS	Final Programmatic EIS for Solar Energy Development in Six Southwestern States
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
T&E	Threatened and Endangered Species
TCP	traditional cultural property
TRA	Transportation
UEPA	Utility Environmental Protection Act
US	United States Route
USACE	United States Army Corps of Engineers
USC	United States Code

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USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geographical Survey
UUD	unnecessary or undue degradation
VEA	Valley Electric Association, Inc.
VG	Vegetation
VR	Visual Resources
VRM	Visual Resource Management
WEAP	Worker Environmental Awareness Plan
WILD	Wildlife
WR	Water Resources

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1 Introduction

The Bureau of Land Management (BLM) published the Notice of Availability (NOA) of the Resource Management Plan Amendment (RMPA) and Draft Environmental Impact Statement (EIS) (RMPA/EIS) in the Federal Register on June 7, 2019, for the Gemini Solar Project. The publication of the NOA began a 90-day public comment period that ended on September 5, 2019.

Comments on the Draft RMPA/EIS were accepted by the BLM using United States Postal Service mail, by email, and in hard copy at the BLM offices during the 90-day public comment period. Additionally, the BLM hosted two public meetings to provide the public with the opportunity to speak with representatives of the BLM, ask questions, and submit comments on the Draft RMPA/EIS in writing or verbally. Verbal comments received at the public meetings were recorded by a court reporter. The public meetings were held on July 23, 2019, in Las Vegas, Nevada, and July 24, 2019, in Moapa, Nevada. All comments are given equal consideration, regardless of method of submittal.

The BLM is required to assess and consider comments on the Draft RMPA/EIS both individually and collectively (40 Code of Federal Regulations [CFR] 1503.4(a)). This report provides the comments received during the 90-day public review period regarding the Draft RMPA/EIS prepared for the Gemini Solar Project and the responses to those comments.

Where appropriate, in response to the comments received, the text of the Draft RMPA/EIS has been revised. All changes are made in the body of the Final RMPA/EIS. The text changes are identified in Chapter 5: Text Edits to the Draft RMPA/Draft EIS in Preparing the Final RMPA/EIS. Text additions are highlighted. Deleted text is indicated by ~~strikethrough and highlight~~. Large organizational changes to the Final RMPA/EIS are summarized in Chapter 5, as well.

2 Comment Processing and Index

2.1 Overview

The BLM received a total of 461 substantive and non-substantive letters from various state and local agencies, Native American tribes, non-governmental organizations (NGOs), private companies, individual members of the public, and form letters from the public. Of the 461 letters received, 97 of the letters were against the project, 341 of the letters were for the project, and 23 were neither for nor against the project. A total of 10 form letters were received, comprising 276 of the 461 letters. Form letters are defined as submissions that were identified as identical letters submitted by individuals as part of an organized letter writing campaign or submissions identified as part of an organized letter campaign that also contained unique text added to, embedded in, or altered from the form letter text. Of the 276 varying form letters, 16 of the letters were against the project and 260 of the letters were for the project.

2.2 Substantive Comments

Consistent with 40 CFR 1503.4(b), this report focuses on substantive comments on the Draft RMPA/EIS. The BLM National Environmental Policy Act (NEPA) Handbook defines substantive and non-substantive comments as indicated below. Substantive comments address one or more of the following:

- The accuracy of information in the Draft RMPA/EIS;

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- The adequacy of, methodology for, or assumptions used for the environmental analysis;
- New information relevant to the analysis;
- Reasonable alternatives in addition to those analyzed in the Draft RMPA/EIS; and/or
- Changes or revisions in one or more of the alternatives.

Comments that are not considered substantive include the following:

- Comments in favor of or against the proposed action or alternatives without reasoning that meet the criteria listed above;
- Comments that only agree or disagree with BLM policy or resource decisions without justification or supporting data that meet the criteria listed above;
- Comments that do not pertain to the project area or the project;
- Comments that take the form of vague, open-ended questions.

Comments that merely express an opinion for or against an alternative or the proposed action were generally not identified as requiring a response because they meet the BLM NEPA Handbook definition of a non-substantive comment. Of the total letters received, 114 comment letters were identified as containing substantive comments, and the remaining 347 comment letters were identified as containing non-substantive comments. All substantive comments are addressed in this report. Non-substantive comments are briefly summarized in Chapter 4: Non-Substantive Comments but are not responded to in accordance with the BLM NEPA Handbook. All letters, both substantive and non-substantive can be found in Attachments A and B to this report. The BLM can do the following in response to substantive comments (40 CFR 1503.4(a)):

- Modify alternatives, including the proposed action;
- Develop and evaluate alternatives not previously given detailed consideration by agencies;
- Supplement, improve, or modify their analyses;
- Make factual corrections; and
- Explain why the comments do not warrant further agency response, citing appropriate sources or authorities.

2.3 Submission-Level Processing

The 113 substantive comment letters received from the public during the 90-day public comment period were entered into a database and assigned a unique index code. Letters received from government agencies and tribes received a letter code beginning with A (e.g., A3 for the third agency letter). Letters received from NGOs and private companies were assigned a letter code beginning with B. Public comments were assigned a letter code beginning with C, and comments received orally or in written form at the public meetings were assigned with a letter code beginning with D.

The content of each letter was reviewed. Based on this review, individual substantive comments within each letter were identified. Each individual substantive comment was assigned a unique comment number based on the index code and the number of comments identified in the letter. For example, if a substantive comment letter with the index code A1 brought up four separate substantive comments, the submission text was parsed into four separate comments numbered A1-1, A1-2, A1-3, and A1-4. This process resulted in 1,147 individual substantive comments. Since substantive comments were coded in every letter, some of these substantive comments are not unique in the case that letters from different

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commenters had the same content. Table 2.3-1 lists each commenter and the letter or oral testimony's index code.

Table 2.3-1 Index of Comment Letters with Substantive Comments on the Draft EIS

Index Code	Date of Letter	Commenter (Last Name, First Name)	Affiliation
Public Agencies and Tribal Governments			
A1	9/5/2019	Dunning, Connell	United States Environmental Protection Agency (USEPA)
A2	5/20/2019	Hardenbrook, Bradford	Nevada Department of Wildlife
A3	9/6/2019	Mahr, Aaron	National Parks Service
A4	9/5/2019	Maples, Matt	Nevada Department of Wildlife
A5	7/29/2019	McKay, Deann M.	Nevada Division of State Lands
A6	8/21/2019	Patch, Dennis	Colorado River Indian Tribes
A7	8/1/2019	Simmons, Vickie	Moapa Band of Paiute Tribes
A8	6/12/2019	Whitfield, Brenda	Clark County Department of Air Quality
A9	8/26/2019	-	Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution
A10	10/10/2019	Simmons, Vickie	Moapa Band of Paiutes
Non-Governmental Organizations and Private Companies			
B1	9/4/2019	Aardahl, Jeff	Defenders of Wildlife
B2	8/29/2019	Andre, James M.	Granite Mountains Desert Research Center
B3	9/5/2019	Belenky, Lisa T.	The Center for Biological Diversity
B4	7/23/2019	Brittner, Lynn	Old Spanish Trail Association
B5	9/5/2019	Brittner, Lynn	Old Spanish Trail Association
B6	9/5/2019	Clarke, Chris	National Parks Conservation Association
B7	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association
B8	9/5/2019	Gilman, Katie	The Wilderness Society
B9	9/5/2019	Graf, Ricardo	Solar Partners, LLC
B10	8/16/2019	LaRue, Edward	Desert Tortoise Council
B11	9/5/2019	Maggi, Andy	The Nevada Conservation League
B12	9/5/2019	McAllister, Elise	Partners in Conservation

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Index Code	Date of Letter	Commenter (Last Name, First Name)	Affiliation
B13	9/5/2019	Miller, Garry	TransWest Express LLC
B14	9/4/2019	Schoenhut, Karimah	Sierra Club
B15	9/5/2019	Zablocki, John	The Nature Conservancy
Individuals			
C1	8/19/2019	Adamson, Sharon	-
C2	8/20/2019	Alberto, Gregorio	-
C3	9/5/2019	Barrow, Carissa	-
C4	6/27/2019	Brown, Rachael	-
C5	9/4/2019	Bundorf, Judy	-
C6	7/20/2019	Cantrell, Ann	-
C7	6/13/2019	Cao, Diana	-
C8	8/18/2019	Castro, Reatha	-
C9	6/14/2019	Cepielik, Jeff	-
C10	9/4/2019	Chester, Thomas L.	-
C11	6/12/2019	Clark, John	-
C12	8/22/2019	Conlin, Carin	-
C13	6/14/2019	Dages, Jeffrey	-
C14	7/20/2019	Dang, Larisa	-
C15	8/18/2019	Davidson, James	-
C16	7/20/2019	Decker, Andrew	-
C17	6/9/2019	Doucet, Denise	-
C18	8/19/2019	Fawke, Jane	-
C19	7/24/2019	Fitch, Lindsay	-
C20	7/20/2019	Flores, Michele	-
C21	8/27/2019	Fodor, Steve	-
C22	8/1/2019	Fulmer, Garren Lee	-
C23	9/5/2019	Ghiglieri, Dennis	-
C24	8/31/2019	Gonzales, Shaun	-
C25	8/18/2019	Gordon, Leslie	-
C26	7/25/2019	Gregg, Kathy	-
C27	7/14/2019	Grund, Paul	-
C28	8/27/2019	Harold, Erin	-
C29	6/25/2019	Jill, Vincent	-
C30	9/4/2019	Kingma, Kevin	-

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Index Code	Date of Letter	Commenter (Last Name, First Name)	Affiliation
C31	3/3/2019	Kreile, Alex	-
C32	8/22/2019	LaChance, Denise	-
C33	8/1/2019	Lahav, Denise	-
C34	6/13/2019	Lucas, Delphine	-
C35	9/3/2019	Lyman, Shari	-
C36	8/20/2019	Lyons, David H.	-
C37	8/29/2019	MacRae, Marsden	-
C38	8/20/2019	Mauthe, Nancy	-
C39	6/14/2019	Mortensen, Wendell	-
C40	8/19/2019	Mudge, Steve	-
C41	8/18/2019	Myers, Lisa	-
C42	8/21/2019	Nguyen, Thanh Phong	-
C43	8/30/2019	Nolan, Ruth	-
C44	8/30/2019	Norris, Jeannine	-
C45	8/18/2019	Oppen, Anne van	-
C46	8/18/2019	Overlie, Janine	-
C47	8/18/2019	Papp, Meagan	-
C48	8/20/2019	Papp, Ashleigh	-
C49	8/29/2019	Parks, John C.	-
C50	7/25/2019	Peppard, Todd	-
C51	8/25/2019	Peterson, Darlene	-
C52	6/8/2019	Jena, Jean Publiee	-
C53	9/5/2019	Quantz, Michael	-
C54	8/21/2019	Reich, Lisa	-
C55	9/1/2019	Rutherford, Lisa	-
C56	8/20/2019	Sailor, Cheryl	-
C57	8/25/2019	Sampson, Sondra	-
C58	7/20/2019	Schank, Alice	-
C59	8/19/2019	Schwartz, Joyce	-
C60	7/29/2019	Shupe, Chris	-
C61	8/18/2019	Skye, Teresa	-
C62	9/2/2019	Slim, Escalante	-
C63	9/4/2019	Slim, Escalante	-
C64	8/30/2019	Spotts, Richard	-

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Index Code	Date of Letter	Commenter (Last Name, First Name)	Affiliation
C65	7/21/2019	Stanton, Donna	-
C66	8/29/2019	Stevenson, Randy	-
C67	6/19/2019	Syzdek, David	-
C68	7/23/2019	Vivier, John	-
C69	8/19/2019	Wallace, Norma	-
C70	8/29/2019	Weiner, Terry	-
C71	8/18/2019	Wiegman, Sherri	-
C72	8/25/2019	Williams, Joshua	-
C73	6/27/2019	Williams, Ted	-
C74	7/14/2019	Williams, Timothy	-
C75	9/4/2019	Wilson, Jim	-
C76	7/20/2019	Wolf, Mary	-
C77	8/20/2019	Wollman, Nan	-
C78	9/4/2019	Youngelson, Noah	-
C79	6/12/2019	Youngelson, Noah	-
C80	8/18/2019	Zana, C	-
C81	6/17/2019	-	-
Public Meeting			
D1	7/23/2019	Emmerich, Kevin	-
D2	7/23/2019	Bundorf, Judy	-
D3	7/23/2019	Carter, Max	-
D4	7/24/2019	Harper, Christopher	-
D5	7/24/2019	Jackson, Donald	-
D6	7/9/2019	Mowery, Lee	-
D7	7/9/2019	Mowery, Lee	-
D8	7/9/2019	Mowery, Lee	-

3 Comments and Responses to Comments

3.1 Overview

The following section lists the individual substantive comments received during the 90-day public comment period and the BLM's responses to those comments. All comments received have been incorporated into the Project record and are located in Attachments A and B. As described in Sections 2.1 and 2.2, each individual substantive comment was given a unique code (e.g., A1-1) comprised of the letter and comment identification numbers.

3.2 Master Responses

Many commenters expressed similar or identical concerns. This section contains responses to address comments on the topics that were raised multiple times. Master responses provide information in a comprehensive discussion that clarifies and elaborates upon, as necessary, the analysis in the Draft RMPA/EIS and supplemental reports.

3.2.1 Master Response 1: Alternatives

3.2.1.1 Summary of Key Comments Received

Purpose and Need

Several commenters expressed concerns that the purpose and need was too narrowly defined by the BLM and, thus, a reasonable range of alternatives was not considered. Commenters stated that the purpose and need essentially adopts the applicant's objectives as the BLM's own (to build a 690-megawatt [MW] photovoltaic [PV] solar facility plus battery storage) and does not provide the decisionmaker a reasonable set of choices given the resource conflicts identified in the Draft RMPA/EIS. A commenter specifies further that the purpose and need identified in the Draft RMPA/EIS emphasizes Federal Land Policy and Management Act of 1976's (FLPMA's) multiple-use mandate but fails to consider that FLPMA also requires that public lands be managed, "...on the basis of multiple use and sustained yield" and in a manner that "...will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use." These commenters stated that natural resources protection should also have factored into the purpose and need, per FLPMA, in order to allow for a wider range of alternatives to be considered that allowed for resource protection.

Reasonable Range of Alternatives

Numerous commenters stated that the Draft RMPA/EIS failed to review a full range of alternatives. The BLM NEPA Handbook was cited in the comments as follows: "For renewable energy rights-of-way, there are many different types of alternatives that are considered by the BLM and the applicant during pre-application activities and that are suggested to the BLM by external parties through scoping and comments on the draft NEPA document. These alternatives typically include: modified site configurations (e.g., varied turbine or solar panel layouts, or different configurations for support and access facilities), modifications to the proposed technology (e.g., wet vs. dry cooling), different technologies (e.g., PV vs. concentrated solar power), other BLM land locations, non-Federal land locations, reduced project

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footprint/MW, and phased construction.” Commenters identified that these types of alternatives were not addressed in the Draft RMPA/EIS.

Other On-Site Alternatives

Several commenters made suggestions that other on-site alternatives should have been considered, including the following:

- A reduced footprint alternative
 - A footprint that reduces impacts to resources such as desert tortoise, threecorner milkvetch, and Old Spanish National Historic Trail (OSNHT)
 - Improvements in technology that allow for greater energy output in less space; commenters noted that the proposed acreage is much larger than other solar facilities that are generating similar MW
- An alternative that includes development area F since very few desert tortoises were found in this approximately 1,800-acre area, and areas to the east of development area F that the commenters felt would likely have fewer desert tortoise, as well
- Other areas of the 44,000-acre lease area, as commenters believed that these areas were dismissed without further explanation
- An alternative that entirely avoided all threecorner milkvetch habitat on-site
- Other technologies such as nuclear

Off-Site Alternatives

Numerous commenters stated that the Project does not belong on the proposed site due to the number of natural and cultural resources present. These commenters stated that various off-site alternatives should have been carried through the analysis, including the following:

- Rooftop solar throughout Las Vegas, which commenters thought was plentifully available
- On top of parking lots
- Distributed/small generation near the end users
- Brownfield or other disturbed areas
- Conforming with the Solar Programmatic Environmental Impact Statement (PEIS) and using lands within designated Solar Energy Zones (SEZs)
- Other locations outside of Clark County, including Millers SEZ (Esmeralda County) and Lincoln County

Many commenters also stated that alternatives should have identified areas, presumably off-site, that had fewer or no desert tortoise and that avoided the California Crossing of the OSNHT.

Conservation Area Alternatives/ACEC Alternatives

Commenters identified that an alternative that included making the Project area a Conservation Area or Area of Critical Environmental Concern (ACEC) should have been included for full analysis. Suggestions include updating the 1998 RMPA to make the entire Project area a conservation area for desert tortoise and threecorner milkvetch, to protect the OSNHT, and to change the VRM from Class III to more protective Class I and II.

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Differences in Action Alternatives

NGOs and a few individuals identified that they believed the two action alternatives and the Proposed Action were essentially the same and, therefore, the Draft RMPA/EIS failed to assess alternatives as required under NEPA. Their reasoning was that mowing is a new and unproven methodology. The Draft RMPA/EIS acknowledges that the results of mowing and reoccupation by desert tortoise are unknown and, therefore, impacts could remain adverse, same as for the Proposed Action and, therefore, the alternatives are the same as the Proposed Action since they are otherwise the same size. One commenter stated that the Draft RMPA/EIS failed to evaluate an alternative that would address the uncertainty. The commenter suggested deferring authorization for construction at the Project site until after the mowing approach has been evaluated scientifically via a properly designed experimental scale version that can demonstrate its effectiveness.

3.2.1.2 Responses to Key Concerns

Purpose and Need

The BLM's purpose and need is identified on page 1-1 of the Draft RMPA/EIS: "Taking into account the BLM's multiple-use mandate, the BLM's purpose and need for this action is to respond to the ROW application submitted by Solar Partners, XI, LLC (Applicant) under Title V of FLPMA (43 United States Code [USC] § 1761) (serial number N-84631) to construct, operate, maintain, and decommission the Project." This statement of purpose and need is consistent with BLM practice. For clarification, the Final RMPA/EIS description of public land management was revised to state, "In accordance with FLPMA, public lands are to be managed for multiple uses in a manner that accounts for a combination of balanced and diverse resources uses that consider the long-term needs of future generations for renewable and non-renewable resources."

The Applicant's objective is separately identified and is to contribute approximately 690-MW of renewable energy to meet the demand in Nevada and/or California, as stated on page 1-1 of the Draft RMPA/EIS. BLM's purpose and need does not stipulate the size or MWs of the Project, even though the size and MW of the Project are included in the ROW application to which the BLM must respond.

The BLM's purpose and need helps to shape the range of alternatives. The purpose and need, as stated, provided a large degree of latitude in the alternatives considered, as it only specified a response to the ROW application. The BLM prepared an Alternatives Report, which explained how the agency developed alternatives and determined the alternatives that were reasonable and would be carried through for full analysis. The Alternatives Report was incorporated by reference into the Draft RMPA/EIS and was available on the ePlanning website. The Alternatives Report identified numerous additional potential alternatives. Table 3 of the Alternatives Report (pages 2-7 through 2-9) identified alternatives screened that also met the purpose and need. Alternatives that met the purpose and need included other on-site configurations, other areas of the 44,000-acre lease area, other BLM-administered land off-site (Mormon Mesa, North Las Vegas, Indian Springs, Amargosa Valley), and other solar technologies. Many of these alternatives were subsequently screened out as alternatives to carry forward in the EIS for other reasons, such as technical feasibility or speculative implementation, or did not lessen environmental effects.

While commenters stated that the purpose and need should have identified resource protection, the purpose and need as stated does not preclude the consideration of environmental protection and preservation. The Proposed Action is subject to NEPA, and through the NEPA process the impacts to "scientific, scenic, historical, ecological, environmental, air and atmospheric, water resources, and

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archaeological values" are identified. The NEPA document is an informational document and meant to support the findings for issuance or denial of the ROW application. The BLM may include any terms, conditions, and stipulations it determines to be in the public interest and may include modifying the proposed use or changing the route or location of the proposed facilities (43 CFR 2805.10(a)(1)). In the decision process, the BLM must consider how BLM's resource management goals (including as defined under FLPMA and the 1998 Las Vegas Resource Management Plan [1998 LVRMP]), objectives, opportunities, and/or conflicts relate to this non-federal use of public lands.

Reasonable Range of Alternatives

The Draft RMPA/EIS addressed a reasonable range of alternatives in compliance with NEPA. The Council on Environmental Quality (CEQ) and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives. The CEQ has stated that "[r]easonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense rather than simply desirable from the standpoint of the Applicant" (CEQ 1981). To determine which alternatives are reasonable and subject to inclusion in the RMPA/EIS, an alternative screening was conducted as provided in the Alternatives Report. The details of the alternatives evaluation process are provided in the Alternative Report, incorporated by reference and included with the Draft RMPA/EIS. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified; the Hybrid Alternative and the All Mowing Alternative. Table 3 of the Alternatives Report identified 16 additional alternatives to the Proposed Action, the Hybrid Alternative, and the All Mowing Alternative that were considered in the screening process, compliant with NEPA. The screening addressed the following categories:

- Consistency with the purpose and need
- Technical practicality and economic feasibility (where economic feasibility does not cover speculation about an applicant's costs or profit; it refers to whether the implementation of the alternative is likely given past and current practice and technology)
- Consistency with policy objectives for the management of the area
- Remote or speculative implementation
- Substantial similarity in design and effects
- Avoidance or substantial lessening of significant effects

Section 4 of the Alternatives Report identifies the 16 additional alternatives considered but rejected and the reasons for rejection of each. Rejected alternatives included other on-site alternatives, alternative configurations, addition of an energy corridor, and several off-site options. Details on each alternative considered and why each was rejected are provided in the Alternatives Report. A reasonable range of alternatives were considered and documented, as demonstrated in the Alternatives Report.

Other On-Site Alternatives

The primary on-site alternative that commenters requested was a reduced footprint alternative. NEPA regulations do not require a reduced size alternative (40 CFR 1502.14). The mowing alternatives were devised specifically to potentially reduce impacts to desert tortoise. The alternatives and the alternatives development process were compliant with NEPA. While the size of the development was not altered in the alternatives, it should be noted that Mitigation Measure (MM) Wildlife (WILD)-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an Notice to Proceed (NTP) for

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construction, which would further reduce or allow for avoidance of some resources. This condition to reduce the final footprint to that needed to generate 690 MW addresses the concerns that new technologies will allow for the same MW generated in much less than 7,100 acres. The BLM will ultimately determine whether to grant the ROW, deny the ROW, or approve the ROW with modifications, and those modifications could include a reduced acreage footprint.

Other commenters were concerned that additional on-site alternatives were not considered. The Alternatives Report discussed the consideration of other on-site alternatives, including other areas within the 44,000-acre lease area. As stated in the report on page 4-1, “The Applicant examined the 34,000 acres (13,759 hectares) of land within the 44,000-acre (17,806-hectare) ROW application area that are not proposed for development, to determine whether other suitable sites could be found within the application area for the Project. The criteria for a suitable solar site included access to highways, proximity to electric transmission lines, a relatively flat slope, and minimal visual conflicts.” Areas were ruled out due to having slopes greater than five percent, which would require substantial landform alteration to make them feasible for development. Areas in proximity to areas with greater than five percent slope, which would not allow a contiguous area large enough to support a solar layout, were also ruled out. Two flat areas were identified—the site and areas close to Valley of Fire road but to the east of the site. Proximity to the Muddy Mountains increases the scenic quality of these two sites, which would be more visible to recreationalists in the mountains. Development on these two sites would increase the visual impacts from the Project. Therefore, these sites were eliminated from further review. An area in the southern portion of the 44,000-acre lease area was also evaluated as it was relatively flat, but this area is located further from Interstate 15 (I-15) and Valley of Fire Road, which would require much longer access roads and generation-tie (gen-tie) lies, so it was eliminated. Section 4.2.1 of the Alternatives Report, incorporated into the Draft RMPA/EIS by reference, provides more information on on-site alternatives considered.

Commenters noted that some areas had much lower desert tortoise densities but were not included in the alternatives, particularly development area F. Development area F was evaluated and was intentionally not included in any of the alternatives. The lowest desert tortoise density was found in development area F due to the presence of sandy soils that do not support burrowing. This area was surveyed to develop the alternatives, as the low density of desert tortoise was expected. The State of Nevada Critically Endangered/Fully Protected threecorner milkvetch was found in high abundance in this development area, so the development area was not included in the alternatives. The threecorner milkvetch's range and known population distribution is much more restricted than that of desert tortoise. Over 1,100 individuals of the plant were found in development area F, which was the vast majority of the threecorner milkvetch occurrences and individuals identified during surveys. Development area F was also modeled threecorner milkvetch habitat. Options for mitigation for the plant species are also very limited. The BLM determined that development area F would not appear in any of the alternatives carried forward for analysis.

Commenters suggested an alternative should be included that avoids the over 700 acres of modeled threecorner milkvetch habitat that the Draft RMPA/EIS identified. While the alternatives did not fully avoid all of the modeled threecorner milkvetch habitat, the vast majority of the threecorner milkvetch occurrences and individuals identified during surveys were avoided in all of the alternatives (noting that only one year of surveys were conducted and as an annual plant the locations could change from year to year). Development areas D and E encompass most of the acreage of threecorner milkvetch habitat still within the Project development area, but few individuals or occurrences were found in these areas during surveys. Due to the generally inverse relationship between high-quality threecorner milkvetch habitat and

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high-quality desert tortoise habitat, inclusion of some areas of threecorner milkvetch habitat was retained as these areas had fewer tortoise.

A few commenters also suggested that other technologies should have been examined for the site, including nuclear. Other types of renewable energy projects, including wind, geothermal, and other solar technologies, were rejected through the alternatives screening process from detailed consideration because they would not meet BLM's purpose and need to respond to the Applicant's application under Title V of the FLPMA for a ROW grant to construct, operate, maintain, and decommission a solar PV facility on public lands. Refer to the Alternatives Report, provided with the Draft RMPA/EIS, for additional discussions as to why other technologies were rejected. Nuclear would be rejected for similar reasons. Nuclear, while largely greenhouse gas (GHG)-free, requires water and nuclear waste disposal, both of which have substantial environmental impacts.

Off-Site Alternatives

Commenters made numerous suggestions that off-site alternatives should have been considered and carried through the analysis. Off-site alternatives were included in the Alternatives Report, incorporated by reference and available with the Draft RMPA/EIS. The Alternatives Report provided additional details on the off-site alternatives considered and why they were rejected. The information was also summarized in Table 2.5-1 of the Draft RMPA/EIS, on pages 2-10 through 2-11. Off-site alternatives including private land, other BLM-administered lands, brownfields and degraded lands, efficiency, and distributed generation (including rooftop solar) were all examined and screened through the NEPA-compliant screening process (as described under the Purpose and Need discussion, above). Distributed generation solar, including rooftop solar, was rejected from detailed consideration because such systems typically generate less than 10-MW of energy. To be a viable alternative to the Project, there would have to be newly installed solar panels sufficient to generate up to 690-MW of capacity, approximately the equivalent of 69 typical systems. For a variety of reasons (e.g., upper limits on integrating distributed generation into the electric grid, costs, lack of electricity storage in most systems, and continued dependency of buildings on grid-supplied power), distributed solar energy alone cannot meet the goals for renewable energy development. Ultimately, both utility-scale and distributed generation solar power would need to be deployed at increasing levels, and the highest penetration of solar power overall would require a combination of both types. Distributed generation is a different type of facility and does not meet the purpose and need.

Adequate space to accommodate the Project was not available in the Dry Lake SEZ or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action.

Commenters questioned why areas outside Clark County were not considered, including the Millers SEZ and Lincoln County. These areas were not considered as the screening also required identifying areas that reduced the need for new transmission. Because of the proximity to Las Vegas, available transmission capacity is primarily in Clark County. The Millers SEZ does not appear to have any pending applications; however, transmission lines/transmission capacity appears to be limited. The Final Programmatic EIS for Solar Energy Development in Six Southwestern States (Solar PEIS) also acknowledges this limitation and potential effects. This SEZ is very far from load centers. This area,

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therefore, was not a feasible alternative as it would likely require the construction of extensive new high-voltage transmission, which can create expansive visual impacts, dust impacts, habitat impacts, weed vector impacts, and more.

No off-site alternatives that avoid impacts to desert tortoise, avoid the OSNHT, and could support a utility-scale project in reasonable proximity to transmission could be identified.

Many commenters also questioned why SEZs from the Solar PEIS were not utilized instead of the Project site, or why development would be allowed outside of a SEZ. Many commenters claimed solar is not allowed on the site based on the Solar PEIS. The Plan of Development (POD), incorporated by reference into the Draft RMPA/EIS, explained, "The Project site is within a 'variance area' for solar power plant development, as defined in the Record of Decision (ROD) prepared for the Solar PEIS. The ROD does not apply to this Project since the ROW application pre-dates the Solar PEIS." The application for the Project was considered a "pending application" because it was filed within a proposed variance area before the publication of the Supplement to the Draft Solar PEIS on October 28, 2011. Pending applications are not subject to any decisions adopted by the Solar PEIS ROD. The BLM processes pending solar applications consistent with the land use plans in place prior to amendment by the Solar PEIS ROD and any other applicable policies and procedures.

Conservation Area Alternatives/ACEC Alternatives

Creation of a Conservation Area or designating an ACEC for desert tortoise, OSNHT, and threecorner milkvetch on the Project site, instead of issuing the ROW, was suggested by many commenters. A conservation alternative was not considered; however, as creation of such an area instead of the Project does not meet the purpose and need to respond to the application. Creation of a Conservation Area or ACEC could be part of the No Action Alternative, as a likely consequence, but is a separate and unique action and would require an RMP amendment or update (also suggested as being needed by several commenters). The BLM will decide to approve or deny the ROW application based on the NEPA analysis and other considerations. Creation of an RMP amendment to designate the Project area as a Conservation Area or ACEC is, therefore, outside the scope of this RMPA/EIS.

Differences in Alternatives

Commenters reasoned that because the impacts of the mowing alternatives are unknown and the Draft RMPA/EIS acknowledges adverse effects to tortoise and loss of habitat would still occur, the alternatives are all effectively the same. The Draft RMPA/EIS appropriately acknowledges the potential for adverse effects and the loss of habitat from the alternatives; however, the degree of impact is reduced as compared with the Proposed Action if desert tortoise successfully reoccupies the mowed areas of the solar field. Refer to **Master Response 2: Mojave Desert Tortoise** for more information on desert tortoise impacts. The alternatives, therefore, include potential differences in severity of impacts on desert tortoise individuals and habitat and, in so doing, are sufficiently different and adequate under NEPA.

3.2.2 Master Response 2: Mojave Desert Tortoise

3.2.2.1 Comments

Mowing as a New, Unproven Method

A common concern was that the mowing methods proposed for the All Mowing Alternative and the Hybrid Alternative are new and experimental. Commenters stated that these methods of mowing

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vegetation and allowing tortoises to return after construction has not been proven compatible with maintaining a viable desert tortoise population. Commenters believed this method should not be allowed until it is proven to work on a smaller scale. Concerns for why it may not work include the following:

- **Microclimate:** Commenters expressed concerns about how the solar panels would affect the microclimate, including temperature and soil moisture.
- **Alteration of Creosote and Habitat:** Commenters stated that too much alteration would occur to creosote and tortoise habitat within the solar array to allow it to function, both during construction from crushing and compacting soils and from mowing. Concerns also included the alteration of habitat through the destruction of burrows.
- **Shade from Panels:** Commenters stated concerns that the panels will shade out vegetation, reduce soil moisture, affect tortoise emergence from hibernation, and increase exposure to predators.
- **Initial Mowing During Construction:** Several commenters expressed concern that mowing during construction would harm, kill, or deafen adult and juvenile desert tortoise.
- **On-going Operations and Maintenance and Mowing:** Numerous commenters stated that the continued use of motorized mowing equipment and vehicles in mowed areas that tortoise occupy would compact soils and crush tortoise and tortoise burrows during operations and maintenance.
- **Herbicide and Dust Palliative Use:** Other commenters said the Draft RMPA/EIS needs to address the use of herbicides and dust palliatives on desert tortoise.
- **Increases in Weeds:** Comments stating that the mowed areas will become infested with weeds that will negatively affect tortoise forage were also received.

Tortoise Translocation

Several comments were received related to tortoise translocation, including concerns over the spread of diseases during the translocation process and addressing why 34 and 36 tortoises would be allowed to be translocated under the All Mowing Alternative and the Hybrid Alternative when the area they would be moved to is not a depleted population as required/defined in the 1994 Recovery Plan. Other commenters questioned the success of translocation, and commenters stated that it is generally unsuccessful.

Desert Tortoise Habitat and Densities and Impacts to Connectivity and Gene Flow

Many comments were received stating that the Draft RMPA/EIS did not adequately address impacts to desert tortoise connectivity and gene flow across the greater region. The commenters stated that the Project is located in a priority habitat linkage area (Priority 1 and Priority 2) for the desert tortoise with very high-quality habitat and desert tortoise densities that are among the highest in the Northeastern Recovery Unit, as well as all other recovery units throughout the range of the species. The commenters identify that the United States Fish and Wildlife Service (USFWS) recommended to BLM that renewable energy projects should not be located within priority habitat linkages, which it identified on maps submitted to BLM in its comments on the 2104 Solar PEIS.

Commenters also expressed concern that large-scale habitat loss in this connectivity corridor should not be authorized. Commenters noted that the 1994 Desert Tortoise Recovery Plan requires that functional corridors or habitat linkages connecting Areas of Critical Environmental Concern be maintained and, for this reason, the Project would not comply with the Recovery Plan requirements.

Other commenters honed in on the mowing alternatives when expressing concerns over connectivity. These commenters believe that mowing does not alleviate connectivity concerns as the Draft RMPA/EIS

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identifies that the reoccupation of the mowed areas is unknown, and if tortoise do not successfully use the solar array sites, then they cannot pass through and gene transfer will be adversely impacted.

Cumulative impacts with respect to connectivity were also raised, stating that the Draft RMPA/EIS did not address the cumulative impacts of projects that could impact gene flow, in conjunction with the Project.

Take of Desert Tortoise

Several commenters requested clarity in regard to the use of the term *take*. In particular, comments pertained to what would occur to the desert tortoise under the Proposed Action and what the level of effects on desert tortoise are for each action alternative to allow comparisons between the action alternatives and the Proposed Action.

3.2.2.2 Responses

Mowing as a New, Unproven Method

Scientific Study. The comments that the mowing alternative is new and unproven are valid concerns. No long-term data is available as this technique is new, as the commenters identify. This method has been employed on a small-scale project, but published data is not available on the outcome in relation to desert tortoise reoccupation. Comparing the Project to another site would not be possible.

To address concerns related to the uncertainties of mowing, the Project would include long-term monitoring and the publishing of important data, as stipulated in a Long-Term Monitoring Plan. The Long-Term Monitoring Plan is a condition of the Biological Opinion and would be reviewed and approved by the USFWS and BLM. The Long-Term Monitoring Plan for the Project will include numerous research and monitoring objectives for desert tortoise and native vegetation. The Long-Term Monitoring Plan will require tracking of transmitters and tortoise health assessments. Additional monitoring of vegetation would also be required in the Site Restoration Plan, available with the Final RMPA/EIS. The Site Restoration Plan requires monitoring by qualified personnel under the direction of the Designated Biologist, to be conducted in the mowed areas. Long-term vegetation monitoring would be conducted in accordance with the Long-Term Monitoring Plan to measure change and recovery in vegetation within the Project site. These test plots would provide information about habitat recovery for the Mojave desert tortoise. Development of this monitoring study would be in coordination with the BLM, who would be involved in setting up monitoring design and criteria for these plots. Quantitative monitoring would be developed in coordination with the BLM and may follow the methods used for vegetation sampling to quantify the percent cover, density, and species richness of native perennials and annuals in each area and the percent cover of non-native and noxious weeds. These measurements can be compared to the pre-Project conditions documented during the baseline vegetation sampling conducted for the Project. Success of native annuals can be measured against a comparable, but undisturbed, nearby reference site because annual plant germination and growth can vary greatly between years. Qualitative monitoring, including photo monitoring, may also be conducted. If monitoring under the Long-Term Monitoring Plan and Site Restoration Plan indicates that success standards would not be met, then adaptive management measures would be suggested and implemented to ensure success. Recommendations for corrective measures would be made in reports or in monitoring data sheets and progress reports, if urgent, and would be implemented in a timely manner with the approval of the BLM. Close attention would be paid to potential issues, and adaptive management would be recommended and implemented as soon as problems arise to keep the Project on track for success. With these provisions, the

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success can be tested on this site. Allowing initial development of a smaller acreage to test the mowing option is within the BLM's purview in the ROD.

The Draft RMPA/EIS appropriately acknowledges the potential for adverse effects and the loss of habitat from the alternatives; however, the degree of impact is potentially reduced as compared with the Proposed Action. Successful reoccupation of tortoises in the solar field after construction is unknown, but the new method has potential to succeed. If reoccupation is successful, the effects on desert tortoise under the Hybrid Alternative and All Mowing Alternative would be less than the Proposed Action, where approximately 215 adult tortoises and approximately 900 or more juveniles would be lost.

Microclimate. Commenters expressed concerns about how the solar panels would affect the microclimate, including temperature and soil moisture. A study of solar facilities located in desert areas with minimal vegetation found that during the daytime hours, temperatures were generally cooler in the shaded areas beneath the panels than non-panel areas, but generally warmer in the sunny areas between the panels of the solar field, particularly during the middle of the day. Non-panel areas were marginally cooler and more humid during the night compared to panel area (Suuronen, Muñoz-Escobar, et al. 2017).

Maintenance of native desert vegetation beneath solar panels is a new method, and therefore studies have not been published on the success and microclimate changes associated. Revegetation beneath solar panels has been proven to be feasible with a variety of plants, including crops and grasslands, although potential limitations to success could include absence of direct sunlight and moisture unavailability (Beatty, et al. 2017). Some studies have been conducted that document the changes to the microclimate in solar facilities with vegetation growing beneath the panels. A study of a solar facility where grasses were present found that areas under PV solar panels maintained higher soil moisture throughout the period of observation. A significant increase in late-season biomass was also observed for areas under the PV panels (90 percent more biomass), and areas under PV panels were significantly more water efficient (328 percent more efficient) (Adeh, Selker and Higgins, Remarkable agrivoltaic influence on soil moisture, micrometeorology and water-use efficiency 2018). Studies have been conducted on microclimate impacts associated with presence of solar panels over food crops. Over the course of the experiment, the daily average air and crop temperature, relative humidity, and pressure deficit were comparable in shaded areas beneath panels when compared to full sun plots. However, soil temperature was greatly reduced in the shaded treatments, and balance of incident radiation was different in shaded areas than in full sun (Marrou, et al. 2013).

Alteration of Creosote and Desert Tortoise Habitat. Commenters expressed concern that mowing would significantly alter the function of the creosote bush by reducing plant height and, therefore, the plant's ability to provide shade and areas for burrowing. While true that most soil burrows are constructed under creosote or within creosote clones, shade is probably only one factor. Tortoises are opportunistic burrowers, often targeting micro-topographical relief, so burrowing under larger shrubs is also likely to be partly due to the soil accumulation that occurs under long-lived and larger shrubs. In the mowed habitat in the Project site, the creosote would be shortened but the root crowns and original soil accumulation (i.e., micro-topographical relief or "mounds") would remain. It should be noted that large creosote bushes are relatively uncommon at the site except in washes, which are avoided by the Project.

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Creosote averages roughly a meter or less in height on the Project site (visually estimated), so mowing to 24 inches (61 centimeters) would entail only a small height reduction.¹ The panels would also offer supplementary shade. Original burrows, also, would be flagged and avoided during construction in mowed areas as much as possible.

Initial Mowing During Construction. The initial construction and mowing would occur after desert tortoise exclusion fencing is installed and clearance surveys conducted. The clearance surveys are designed to include the identification and clearance of juvenile as well as adult tortoises. The Project would be required to follow the USFWS desert tortoise clearance protocols and methodology when locating and translocating tortoises. Clearance surveys require 100 percent coverage of the Project area, with a focus on locating all desert tortoises above and below ground within the Project area. These surveys would be conducted immediately prior to surface disturbance at each site within the Project area or following construction of a desert-tortoise-proof fence or similar barrier encompassing the Project area to ensure that tortoises cannot re-enter. Clearance surveys at the Project site must consist of at least two consecutive surveys of the area. Surveys involve walking transects less than or equal to 15 feet (five meters) wide under typical conditions. In areas of dense vegetation, or when conditions limit the ability of the surveyors to locate desert tortoises, transects are reduced in width accordingly. Clearance surveys should be conducted when desert tortoises are most active (April through May or September through October). If desert tortoises are found during the second pass, the USFWS and Nevada Department of Wildlife may require a third survey. If any desert tortoises need to be translocated, the translocation would occur in accordance with the USFWS-approved translocation plan for the Project.

Once the facility construction is complete and it is safe to do so, the fencing would be lifted to allow desert tortoise back into the solar development area. Neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Biological monitors would be on site as well to monitor compliance with protective measures during construction activities and avoid impacts to individual tortoises. When construction is complete, the security fencing around the mowed areas would be modified, allowing approximately eight inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas.

Shade from Panels. Commenters were concerned that shade provided by the panels would alter hibernation, other behaviors, food supply, and soil moisture. Altered hibernation by shade is unlikely. A study found only a weak correlation between hibernation and exogenous (external) conditions, such as temperature (Nussear, Esque, et al. 2007). The results of the study suggested that hibernation behavior is more likely driven by the endogenous (internal or innate) conditions of the individuals in association with

¹ The creosote-white burrobush shrubland alliance comprises approximately 93 percent of the study area. Within this community, white burrobush (*Ambrosia dumosa*) comprises 78 percent of the shrub cover in the study area (Phoenix Biological Consulting 2018). White burrobush rarely reaches 24 inches except in higher elevations or riparian sites (Jepson Herbarium 2019), which are not located within the areas proposed for development. Only two non-cactus shrubs could regularly reach over 24 inches (*Larrea tridentata* and *Psoralea fremontii*), but based on visual estimations conducted during site visits, the *Larrea* on the site is not found to grow taller than 24 inches. The species found in the development areas that could exceed 24 inches are also in significantly low densities (*Larrea tridentata*: 9.6 percent and *Psoralea fremontii*: 0.03 percent). The majority of the vegetation on the Project site is, therefore, under 24 inches in the development areas. The areas where taller vegetation occurs on the Project site are in major washes, such as the California Wash, that would not be developed.

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broad scale seasonal changes in climate. The study also found that photoperiod (duration of sunlight) did not influence the variations in tortoise hibernation. Desert tortoise often burrow into areas that offer shade and protection from predators. The solar panels provide shade to the ground surface, although how that shade will impact tortoise behavior is not known.

The full effects on the native vegetation from the presence of solar panels due to the absence of direct sunlight and moisture unavailability is unknown, although revegetation of plants has been proven to be feasible based on studies (Beatty, et al. 2017). Additionally, sunlight would reach the vegetation growing between the panels as there would be approximately 20 feet (6 meters) between panel rows.

On-Going Operations and Maintenance. Many commenters believed that on-going maintenance would result in continued crushing of vegetation and compaction of soils, and that on-going mowing with heavy equipment and mowers would present an on-going threat to desert tortoise that reoccupy the solar field. These concerns were addressed in the Draft RMPA/EIS and Biological Assessment, included as an appendix to the Final RMPA/EIS. Operations and maintenance within the solar facilities is minimal and would rarely involve heavy equipment. Vegetation under the solar arrays would be cut or trimmed by hand during operations and maintenance. Motorized mowing equipment would not be used once tortoise are allowed back into the solar facility. Trimming would only occur with hand tools that can be mechanical or motorized. Trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Clarifications have been made in the Final RMPA/EIS that no “mowing” would occur after initial construction, only trimming by hand tools.

The trimming and operations requirements are also identified in the Biological Assessment. The Biological Assessment states that “[o]peration and maintenance would require the use of vehicles and equipment, including crane trucks for minor equipment maintenance. Pick-up trucks would be in periodic [use] on the site. No heavy equipment would be used during normal plant operation. Vehicle traffic during operations and maintenance to the Project site would be minimal at less than 20 round-trips per day under normal operational conditions.” Page 44 of the Biological Assessment states, “Solar array areas constructed using mowing would need to have vegetation periodically mowed or trimmed to a height of 18 to 24 inches (46 to 61 centimeters). Vegetation under the solar arrays would be cut or trimmed by hand during panel cleaning to a height that allows the vegetation to maintain its habitat function for desert tortoise and to maintain hydrology patterns on the site while not impacting the functionality of the solar panels. It is anticipated that trimming would occur every few years but not annually.” Both burro bush and, especially, creosote exhibit strong regrowth if root crowns remain intact and do not experience repeated crushing. The Ivanpah Solar Electric Generating System (ISEGS) solar facility may represent an example of constantly pruned habitat that is highly altered but has regrown substantially after initial construction (NRG Energy Services 2018).

The Biological Assessment also requires that biological monitors be present during ground-disturbing and/or off-road vehicle or equipment operations and maintenance activities outside of the fenced solar facility or within mowed areas to ensure that no tortoises are in harm's way. This measure would ensure impacts to tortoises from maintenance are minimized. The Draft RMPA/EIS stated on page 3-91 that “the BLM is in consultation with the USFWS pursuant to Section 7 of the Endangered Species Act of 1973 (ESA) regarding the Proposed Action, and a Project-Specific Biological Opinion will be issued that includes non-discretionary, reasonable, and prudent measures, terms, and conditions to minimize tortoise take. The Section 7 consultation is underway, and the Biological Opinion will be included with the Final EIS, if available at that time.” Consultation is ongoing for this Project, as the USFWS will need to issue a

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Biological Opinion that includes protection measures. Any vehicle or heavy equipment would operate in accordance with the requirements of the Biological Opinion, including remaining on established access roads in mowed areas during regular operation and maintenance. The USFWS has the authority to determine the acceptable impacts to the desert tortoise and the necessary mitigation for this Project under the Section 7 process. All measures in the Biological Opinion for the protection of desert tortoise during Project operation would be required. The Biological Opinion for the Project is anticipated to be completed in November.

Herbicides and Dust Palliatives. Commenters stated that impacts from use of herbicides and dust palliatives on desert tortoise were not addressed, including from chemical runoff. Impacts from herbicide and dust palliative use on desert tortoise were, however, adequately disclosed in the Draft RMPA/EIS. As described on page 2-6 of the Draft RMPA/EIS, use of herbicides would fall under the PEIS for the BLM's Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on BLM Lands in 17 Western States (BLM 2016), which is tiered from the PEIS for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007). A Pesticide Use Proposal (PUP) that would be prepared for the Project and would provide the specifications for herbicide application, including the type of herbicide(s) proposed for use, method of application, and quantities of herbicide. Only herbicides and applications approved in Nevada and included in the RODs for the PEISs would be used. Additionally, the types of herbicides allowed varies between the Proposed Action and the alternatives, as only some of the approved herbicides are allowed in areas where the herbicide could come into contact with desert tortoises and milkvetch. Herbicide use would be conducted in accordance with BLM Manual 9011: Chemical Pest Control and BLM Handbook H-9011-1: Chemical Pest Control. Standard Operating Procedures or herbicide use (included as an attachment to the POD) would be implemented.

Only herbicides deemed safe for desert tortoise would be used in mowed areas, per the existing Biological Opinion for use of herbicides on BLM lands in the District, just discussed. All weed treatments in mowed areas would be spot applications, which would minimize indirect impacts of herbicide on non-target native plant species that are important for desert tortoise as well as milkvetch. Only using herbicides as prescribed by the label would reduce indirect impacts to non-target native vegetation. The herbicides that may be used in mowed areas include aminopyralid, clopyralid, imazapyr, imazapic, glyphosate, metasulfuron methyl, and rimsulfuron. These herbicides are considered to have very low toxicity to mammals, birds, and fish when applied in accordance with all product label requirements and restrictions. There is limited literature on toxicity trials involving reptiles, but exposure to such chemicals may cause changes in behavior, eating habitat, or even mortality with repeated exposure. Herbicides that are believed to have deleterious effects on reptiles, such as 2,4-D, would not be allowed. Any allowed herbicide would only be used during the less active tortoise season.

Dust palliatives may be used in traditional development areas but would not be used in mowed areas unless the Applicant contributes funds to a BLM study to understand the effects of dust palliatives mobilized in stormwater runoff on the health of desert tortoises in accordance with MM Threatened and Endangered Species (T&E)-1 and Water Resources (WR)-2. No palliatives would be used off site, on gen-tie access roads. The dust palliatives that can be used on-site experimentally have been approved by BLM in conjunction with the USFWS. The palliatives do not contain any chemicals known to be toxic to desert tortoises. The experimental use and palliative study will determine if there are any indications of potential long-term exposures to any chemicals derived from dust palliatives. If any are detected in unacceptable levels, corrective action will be required by BLM.

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Dust palliative and herbicide containment on the Project site is required and was addressed on page 3-37 in terms of ensuring that dust palliatives do not end up in stormwater runoff. Page 3-37 of the Draft RMPA/EIS states, "Dust palliatives and herbicides can mobilize into stormwater and cause downstream water quality impacts. To minimize those impacts, MM WR-2 requires a Stormwater Quality Monitoring Program that involves using BLM-approved dust palliatives, periodically testing stormwater quality to verify that impacts are not occurring and making changes to the applications that minimize effects if identified. The program would specify the testing procedures for stormwater quality, frequency, constituents tested, and reporting requirements, including the agencies to which the results must be reported. If standards for water quality are exceeded, the monitoring program requires modification to the palliative use in consultation with BLM." Since stormwater would be monitored at the site and adjustments made to the use of dust palliatives and herbicides, if needed, off-site impacts to desert tortoise should not occur.

Other commenters asked how areas treated with dust palliatives and herbicides would be cleaned out after decommissioning. The Decommissioning and Site Reclamation Plan, to be implemented after decommissioning of the Proposed Action, generally addresses the restoration of disturbed areas that could be impacted by herbicides and palliatives, even though not directly called out in the Draft RMPA/EIS. Page 3-53 of the Draft RMPA/EIS states, "Prior to an NTP, a Site [Reclamation] Plan would be prepared and approved. Implementation of this plan would reduce some of the adverse impacts on native vegetation through the restoration of areas to pre-construction conditions; however, it could still take at least a century to return the site to near pre-disturbance conditions." Some clarifications have been made in the Final RMPA/EIS that the Decommissioning and Site Reclamation Plan would also address soil reclamation to allow for the restoration of the area to pre-construction conditions, as needed.

Weeds. Commenters suggested weeds would occupy the mowed areas and affect forage for juvenile and adult tortoises. While increases in weeds is a concern for any project that involves ground disturbance and the bringing in of people and equipment, extensive measures are included in MM Vegetation (VG)-1 in Appendix H to remove and treat invasive weeds on the Project site. MM VG-1 includes considerable detail as to the measures required for reducing the potential for spread of invasive weeds, including in mowed areas. An Integrated Weed Management Plan is required and is available with the Final RMPA/EIS. Other measures include preparation and implementation of a PUP, mapping of weeds, clearing weeds from vector areas prior to ground disturbance, monitoring, and bonding for the estimated treatment of per acre for the 30-year life of the Project. Many additional provisions are included in MM VG-1, as shown in Appendix H. The Proposed Action would likely have an adverse impact on spread of weeds, even with mitigation; however, the alternatives greatly reduce those risks.

Tortoise Translocation

Concerns over spread of diseases in tortoise are addressed in the Draft RMPA/EIS and the Desert Tortoise Translocation Plan, available with the Final RMPA/EIS. Initial health assessments were performed during surveys in the fall of 2018 on 100 tortoises found in and immediately outside the Project area. As stated in the Desert Tortoise Translocation Plan, included as an appendix to the Final RMPA/EIS, "Health assessments were completed on 100 tortoises on and immediately outside the solar field (Figure 4). The University of Florida analyzed 99 of the 100 samples via Enzyme-Linked Immunosorbent Assay (ELISA) and all samples tested negative for *Mycoplasma agassizii* exposure. Eleven samples proved suspect for *M. testudineum*, with the remaining being negative. Quantitative Polymerase Chain Reaction (qPCR) results on oral swab samples, conducted at the Molecular Diagnostics Lab in Escondido, reported no positive results for *M. agassizii* or *M. testudineum*. Clinical signs were minor and no tortoises were observed to

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have a nasal discharge or oral plaques that would indicate disease." Disease does not appear to be an issue in the Project area.

Pages 22 to 23 of the Desert Tortoise Translocation Plan provide more detail on tortoise health assessments and procedures for translocation to minimize disease spread: "The current Service translocation guidance (2018) requires that tortoises have two health assessments just prior to translocation, 14–30 days apart, with the final assessment within 1–2 days of translocation. This requirement may preclude spring translocation if temperatures are warm. Tortoises only become active in very late March or early April, so the two, separated health assessments could delay translocation beyond the time when ambient temperatures are appropriate for translocation. To avoid this potential scenario, for tortoises to be translocated in spring, this translocation plan suggests that 2–3 health assessments separated by 14 days be conducted the prior fall (i.e., shortly before tortoises enter brumation), with one assessment at translocation in the spring. If the tortoise has not presented previously with clinical signs and passes the translocation algorithm on all 3–4 pre-translocation assessments, then the tortoise can be translocated after the single assessment in spring. There is no evidence that the Project area hosts mycoplasmosis (see Section 3.0, above), so danger from this modified procedure would be minimal. For tortoises being reintroduced from the BLM Research Facility, all tortoises will have had a health assessment with tissue sampling within the prior year. (Juveniles under 100 g will undergo qPCR testing.) For fall translocations, two visual health assessments will be completed just prior to translocation, 14–30 days apart, with the final assessment within one to two days of translocation. For spring translocations, the modification presented above would apply." Tortoises showing disease are not placed with healthy tortoises. In addition, long-term monitoring of tracked tortoises would occur, allowing monitors to intervene if there is a disease outbreak or decrease in the body conditions of tortoises.

Commenters expressed concern that translocation does not work and has negative impacts on tortoise. The findings of several studies have reinforced that use of translocation of desert tortoise generally does not have deleterious effects, where "deleterious effects" range from mortality to changes in habitat use by resident tortoises. Observations of translocated tortoise have been found to be indistinguishable from resident tortoise with respect to all measure of success, notably survivorship and egg production, even in the first year after translocation (K. E. Nussear, Mechanistic investigation of the distributional limits of the desert tortoise *Gopherus agassizii* 2004). Observed mortality was primarily caused by canid predation, for translocated and resident tortoise (Nussear, et al. 2012). Translocated adult tortoises that were originally captured in the wild tend to travel long distances away (up to 5 km) from the release area compared to resident tortoise. Juvenile translocated tortoises disperse, but over shorter distances. This increased movement of translocated tortoise has been hypothesized to have detrimental effects, such as increased exposure to predation or increased stress. Dispersal of translocated tortoise, however, does not appear to translate into greater mortality (Nafus, et al. 2017) or reduced fecundity (Nussear, et al. 2012). Deleterious effects to social structure or from limited resource availability when translocating tortoise have also been hypothesized. No changes in habitat use or movement of residential tortoise were observed following the addition of the translocated tortoise (Nussear, et al. 2012).

Commenters questioned how 34 or 36 tortoises could be translocated south of the site when that area does not meet the definition of a "depleted population," where tortoise translocation is allowable under the 1994 Recovery Plan. It is true that the 34 or 36 adult tortoises (depending on the alternative) would be translocated to an area south of the Project area, as shown in Table 3.8-2 on page 3-86 of the Draft RMPA/EIS. While the area to which they are moved does not meet the definition of depleted population, the translocation can be allowed by the USFWS, who has jurisdiction over impacts to the species under

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the ESA. Another mitigating factor for this site is that most of the tortoises within the Project site under the mowing alternatives will not be distantly translocated to unfamiliar ranges, but rather will be moved within their home ranges. While some social and home-range shifting will undoubtedly occur, it is anticipated to be minimized by familiarity with the landscape and local tortoises.

The Desert Tortoise Translocation Plan is included as an appendix to the Final RMPA/EIS and provides more information on the methods used for translocation. A Long-Term Monitoring Plan will also be developed and implemented for the Project (refer above for more information).

Desert Tortoise Habitat and Densities and Impacts to Connectivity and Gene Flow

Desert Tortoise Habitat and Densities. The Draft RMPA/EIS identified that the Project area has high-quality habitat and high desert tortoise densities, consistent with commenters' assertions. Page 3-80 of the Draft RMPA/EIS [with corrections in the Final RMPA/EIS included] states, "The average density of adult desert tortoises in the Proposed Action area is 18.6 per square mile (7.2 per square kilometer), for the All Mowing Alternative is 22.8 per square mile (8.8 per square kilometer), and for the Hybrid Alternative is 19.9 per square mile (7.7 per square kilometer). The Project site generally supports high-quality habitat for the species, and, of the studies completed, this region has the highest known densities of desert tortoise in the Northeastern Mojave Recovery Unit. The Moapa Solar Project (located approximately 1.7 miles [2.8 kilometers] north of the Project site) had a higher average density of 31.9 adult tortoises per square mile (12.4 per square kilometer). Playa Solar (located approximately 5.8 miles [9.3 kilometers] southwest of the Project site) had a slightly lower average density of 13.1 adult tortoises per square mile (5.1 per square kilometer)."

Impacts to Connectivity and Gene Flow. Concerns over connectivity included that the Project did not consider the importance of the area for connectivity, as identified by USFWS in the Solar PEIS, and that the 1994 Recovery Plan does not allow for projects to block connectivity between ACECs. Concerns over impacts to Critical Habitat Units (CHUs) was also raised. The Biological Assessment for the Project provides considerable supplemental information on desert tortoise habitat, connectivity, corridors, and linkages that expands on the information provided in the Draft RMPA/EIS. The Biological Assessment is included as an appendix to the Final RMPA/EIS. Page 67 of the Biological Assessment identifies the closest ACECs to the Project. The three closest ACECs include the Coyote Springs ACEC, the Arrow Canyon ACEC, and the Mormon Mesa ACEC. These ACECs comprise part of the Mormon Mesa CHU for desert tortoise. As stated on page 72 of the Biological Assessment, "[T]he Project area likely has very limited connectivity to the Mormon Mesa CHU and the associated Critical Habitat area (Figure 19). West of the Action Area, the Dry Lake Range, the railroad west of I-15, and I-15 are all barriers. I-15 is fenced with tortoise exclusion fencing but has culverts (Wise, 2018), which allows for some but restricted movement. Other impermeable barriers (i.e., the Muddy River) far north and northwest would preclude connection to the north." The Project does not provide a habitat linkage connecting the existing CHUs and ACECs that must be protected under the 1994 Recovery Plan.

Commenters also raised concerns over priority linkage designations in the Project area. The Project is in Priority 1 and Priority 2 linkage areas. The priority linkages identified by commenters apply to projects subject to the ROD for the Solar PEIS. This Project has been determined as "grandfathered," as the ROW application pre-dates the Solar PEIS. While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this Project (refer to **Master Response 1: Alternatives**), gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment. The priority linkages and how they relate to this Project are explained on page 73 of the Biological Assessment and have been

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added to the Final RMPA/EIS. Page 73 of the Biological Assessment states, "Based on the USGS model, USFWS identified areas of contiguous, high-value desert tortoise habitat as 'Priority 2' lands for conservation of desert tortoise within the context of the Final Solar PEIS." While the Solar PEIS does not apply to the Gemini Solar Project, the PEIS identifies the Action Area as a desert tortoise connectivity corridor (Figure 21) including predominantly Priority 2 habitat, but also some Priority 1 habitat in the southern part of the Project site and south of the site. It should also be noted that even though the Project area was identified as being in Priority 1 and Priority 2 linkages, the USFWS (<http://www.fws.gov/cno/energy.html>) modeled connectivity through the Project area shows it is highly fragmented and absent in large areas both west and east of the Project, thereby indicating poor functional connectivity to the greater region. Localized connectivity could be adversely affected, however, including for tortoises making east–west movements between the Project site and the North Muddy Mountains. Impacts under the Proposed Action would result in significant adverse effects on localized desert tortoise and connectivity since the entire Project site would be fenced off to tortoise under the Proposed Action. These adverse effects were disclosed in the Draft RMPA/EIS. These concerns over loss of high-quality habitat and connectivity resulted in the development of alternatives that included mowing of the site to allow for tortoises to potentially reoccupy the development areas. The alternatives potentially reduce impacts to connectivity (provided successful tortoise reoccupation of mowed areas) as compared with traditional development methods as the fence would be lifted and vegetation maintained such that tortoise could move through the site in the east/west direction and the north/south direction. Concerns were raised by commenters that if the mowed areas are not reoccupied, then connectivity will be affected, similar to the Proposed Action. The Draft RMPA/EIS appropriately acknowledges the potential for adverse effects, similar to the Proposed Action, if tortoise reoccupation is not successful.

Commenters also expressed that a spatial analysis identifying the cumulative impacts of connectivity was not but should have been included in the Draft RMPA/EIS. The cumulative impacts on connectivity were addressed in the Draft RMPA/EIS. The cumulative impacts to connectivity are acknowledged as adverse, based on the contribution that the Proposed Action or the alternatives could have to an overall impact. Assessing the individual impacts to connectivity of each of the other projects, without regard for the Proposed Action's contribution, is beyond the scope of analysis required under NEPA. The detailed analysis of the Project's impact on connectivity includes a spatial component and discusses the connectivity (or lack thereof) to the ACECs and CHUs in the Recovery Unit. Connectivity impacts are identified as a significant adverse impact, however, due to the size of the Project and ability for local tortoises currently to move east and west across the site and, to some degree, north and south, as previously stated. While the cumulative impacts related to "habitat fragmentation" were determined to be cumulatively significant, none of the other large-scale projects that could affect connectivity, identified in the cumulative list of projects, are located between the natural and anthropogenic barriers isolating the Gemini Project, including the I-15 to the west, the Muddy River to the north, and the Dry Lake and Muddy Mountain ranges to the east and south. There are no other currently proposed projects that could affect gene flow of the population in this area. Some language was added to the Final RMPA/EIS to clarify this point.

Connectivity is also being addressed through consultation with the USFWS under Section 7 of the ESA process for this Project. The Section 7 consultation is specific to this Project. The USFWS has the authority to determine the acceptable impacts to the desert tortoise and the necessary mitigation for this Project under the Section 7 of the ESA process.

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Take of Desert Tortoise

As stated in Section 3.8: Threatened, Endangered, and Candidate Species, the ESA forbids acts that result in the “take” of listed species without a permit, per Section 7. The term “take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such activity (16 USC § 1532[18]). The Proposed Action and action alternatives would require an incidental take statement.

The Draft RMPA/EIS did not specify what exactly would happen to the 215 adult tortoises and approximately 900 or more juveniles under the Proposed Action; however, it does adequately disclose the outcome that “[t]he Proposed Action would result in the direct or indirect take of up to all tortoises found on the Project site, since there are no places within the Northeastern Mojave Recovery Unit where the tortoises can be moved.... The take of all adult and juvenile tortoises on the Project site, in addition to the loss of habitat, would also result in a substantial adverse impact on the species and the local population.” Clarifications have been made in the Final RMPA/EIS that the take is anticipated to be mortality take, or a “loss” for the Proposed Action, as compared with a take for moving and handling under the action alternatives. The action alternatives would reduce the impacts or severity of impacts on desert tortoise compared to the Proposed Action, assuming successful reoccupation of mowed areas. The reader is afforded the appropriate detail of the outcome to compare alternatives, even if the means by which the mortality take would occur is not known or specified. The term “take” has been replaced or augmented with clearer language throughout the Final RMPA/EIS to better describe the differences between the action alternatives and the Proposed Action. Refer to Chapter 5: Text Edits to the Draft RMPA/EIS in Preparing the Final RMPA/EIS and the Final RMPA/EIS for the revisions to the text since the Draft RMPA/EIS.

3.2.3 Master Response 3: Bighorn Sheep and Migratory Birds

3.2.3.1 Comments

Bighorn Sheep

Commenters stated that impacts to bighorn sheep were not adequately considered in the Draft RMPA/EIS, including forage, migration, and hunting. One commenter identified that since a horn was found in the California Wash, that is evidence that they use the Project site. Other commenters stated that bighorn sheep are found in the Muddy Mountains and could be on the Project site.

Migratory and Special Status Birds

Concerns over migratory birds were primarily focused on impacts from “lake effect” collisions for birds and that the impacts were not adequately described and addressed. The commenters stated that there was no information on mitigation attempts to make the Project less hazardous for birds, such as placing panels further apart to break up the lake effect. Comments on the monitoring were made, and one commenter expressed concern that the Bird and Bat Conservation Plan is not available for review. Others said that panels stored flat at night would increase collisions by nocturnal fliers by creating a lake effect. Suggestions to reduce effects included breaking up the panels with space between rows, using a wavy surface on the panels, and using colored panels.

Concerns were also raised over the Project’s impacts to special status birds including golden eagles, yellow warbler, Yuma clapper rail, and southwestern willow flycatcher. Concern was expressed over the foraging and movement of these protected avian species.

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3.2.3.2 Responses

Bighorn Sheep

Commenters claimed bighorn sheep are found on the Project site or in the greater region and, thus, their migration and forage would be impacted by the Project. Bighorn sheep are commonly seen in Valley of Fire State Park and in the Muddy Mountains. The sheep herds in the area can be hunted through a tag. Two horns were observed in the California Wash during the tortoise surveys but likely washed down from the surrounding mountains. Bighorn sheep habitat is not found on the Project site (NDOW 2011) and bighorn sheep do not regularly use the site. Bighorn sheep typically do not inhabit valleys but might move through them if there is a wintering range on the other side. Data available on bighorn sheep movement corridors indicate that the Dry Lake Valley and the Project site are not used as movement corridors by bighorn sheep (NDOW 2006). Evidence of bighorn sheep distribution in the Project area does not support that they use the Project site as a movement corridor or that they are currently present on the Project site. Bighorn sheep are addressed in the Draft RMPA/EIS on pages 3-68 and 3-74 and in the Golden Eagle Survey Report, incorporated by reference into the Draft RMPA/EIS, and available on the ePlanning website. Bighorn sheep were seen in the mountainous areas, not in or near the Gemini Project site.

Hunting of bighorn sheep would not be impacted by the Project. Access to the Muddy Mountains would not be impeded by the Project, as was addressed on pages 3-16 and 3-17 of the Draft RMPA/EIS. Access to the Muddy Mountains is primarily along Valley of Fire Road and BSBCG. Temporary traffic impacts could occur as a result of Project construction, as noted on page 3-16; however, access would not be severed. Once the Project is operational, traffic impacts would be minimal. No impacts to recreation or recreational hunting in the Muddy Mountains would occur as the area does not overlap with the Project and the Project would not sever access.

Migratory and Special Status Birds

Many commenters expressed concerns that the Draft RMPA/EIS did not adequately address bird collisions with solar panels. Bird collisions with construction equipment, transmission lines, facility lighting, and solar panels were addressed on page 3-71 of the Draft RMPA/EIS, which states that “[b]irds could also collide with solar panels resulting in injury or death. These types of collisions have been documented at other solar facilities in the desert. The Bird and Bat Conservation Strategy (BBCS) would include a robust systematic monitoring and adaptive management plan for the Project to assist in avoiding and minimizing impacts on migratory birds, per MM WILD-7. The BBCS is designed to address detection of bird strikes at solar farms based on data from other solar facilities. The monitoring would include overall annual mortality, species composition, and spatial differentiation based on established searcher efficiency and carcass persistence trials at the site.” The Avian and Bat Monitoring and Management Plan (ABMMP) describes the monitoring methods, reporting, and adaptive management. Facility maps are included in the ABMMP. The BBCS and ABMMP (an appendix to the BBCS) is available with the Final RMPA/EIS.

Other commenters focused on the lake effect and suggested that spacing panels or altering their surface would reduce effects. The panels, as proposed, would be spaced approximately 20 feet (6 meters) apart, which is typical for single-axis tracking systems. Fixed tilt facilities are usually more closely spaced. There will be space between rows of trackers, which should reduce effects. Colored and wavy panels are not practical as these types of panels have a degradation of performance over normal panels of about 20 percent, which would mean that more panels would be needed, with greater impacts. The option is not

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viable as the somewhat reduced visual effects do not outweigh the various effects from a larger Project footprint (e.g., desert tortoise, rare plants, air quality, erosion).

Commenters also identified that mitigation did not adequately address bird strikes. Section 3.3: Adaptive Management of the ABMMP identifies the procedures to undertake if monitoring shows substantial impacts to birds and bats, which states that "[b]ased on the results of the mortality monitoring, should the agencies determine that the Project's impacts to birds or bats are substantial and/or that the Project is adversely affecting special status species, then adaptive management actions to address the issues will be discussed; these actions could include installing bird flight diverters, changing Project components that have been identified as a mortality risk, or implementing other appropriate actions to address the issue(s) based on the data."

Concern was raised over the Project's impacts to special status bird species. Suitable habitat for Yuma clapper rail, yellow-billed cuckoo, and southwestern willow flycatcher does not occur within or near the Project area, and there is no evidence to indicate that dispersal would occur in the Project area, as the area lacks aquatic features. These species were not addressed in the Draft RMPA/EIS because they would not occur in or near the Project area. These species are mentioned in the Biological Assessment, included as an appendix to the Final RMPA/EIS. Refer to pages 88 and 89 of the Biological Assessment for more information.

Golden eagles are known to nest in the mountains from 2 to 10 miles (3 to 16 kilometers) from the Project site, as discussed on page 3-71 of the Draft RMPA/EIS and in the Golden Eagle Survey Report available with the Draft RMPA/EIS. Direct effects on migratory birds, including golden eagles, during Project construction and operation could occur from habitat disturbance and loss. Approximately 20 million acres (8 million hectares) of habitat is available within the larger Mojave ecoregion (BLM 2014), including the mountain ranges directly north and south of the Project site. Construction and development of the solar facility and gen-tie lines would result in the loss of approximately 7,097 acres (2,872 hectares) of valley foraging habitat; the impact would be locally significant due to the size of the site but regionally minor. These impacts are reduced under the mowing alternatives since native vegetation and forage would be maintained on the Project site.

3.2.4 Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities

3.2.4.1 Comments

Threecorner Milkvetch Habitat

Numerous comments were provided expressing concern over the Project's impacts on threecorner milkvetch individuals and habitat. The threecorner milkvetch is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened. Commenters identified that removal of over 700 acres (283 hectares) of habitat is not acceptable. Other commenters believed that mowing was not a suitable alternative as it would disturb the aeolian habitat for the species.

Comments were made that no successful seed collecting and replanting attempt has been tested on these rare milkvetches, and no assurance is given that this approach will successfully limit population declines. Seed collection has failed to achieve germination results in many rare Mojave Desert plant species and

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should not be used as a mitigation. The commenters stated that only avoidance can limit declines in the plant populations.

Commenters identified that Clark County has nominated a major portion of the California Wash on the Project site to be protected as an ACEC for threecorner milkvetch.

Nye Milkvetch

Commenters raised concerns that the Project would impact many occurrences of Nye milkvetch. Nye milkvetch is listed by the NNHP as At-Risk and is on the NNPS's Watch List. Commenters also requested that Nye milkvetch be avoided.

Other Rare Plants

Several commenters generally expressed concern regarding impacts on other rare plants.

Vegetation Communities

Several commenters expressed concern about the impacts on the catclaw acacia and desert willow vegetation communities due to presence of rare microphyll woodland that harbor bird species.

Biocrust and Desert Pavement

Many comments were received that the Project would impact biocrusts and desert pavement. Commenters stated the RMPA/EIS needs to address the impacts of destroying these carbon-absorbing living soil communities. The commenters stated that biocrusts and desert pavement would be driven over and crushed and further disturbed by construction and maintenance. Soil biological crust is a mix of organisms that occupy and protect the surface of the soil in most desert ecosystems. The organisms often include filamentous and non-filamentous cyanobacteria, mosses, lichens, liverworts and fungi. One commenter stated that damage to intact desert soils with biotic crusts would result in increased siltation during flooding and dust. Biological crusts protect the soil and hold weeds at bay.

Invasive Plants/Weeds

Numerous concerns over the spread of invasive species were raised in various contexts, including as impacts pertain to desert tortoise, other wildlife, threecorner milkvetch, and loss of habitat. Commenters stated that simply applying herbicides to try to control these noxious weeds may result in elimination of native plants, as well, including the milkvetches.

Loss of Habitat

Commenters stated that mowing vegetation will completely crush and compact soils and destroy many delicate roots under the ground, which will slow and inhibit plant growth. Other comments stated that allowing plants to only grow up to 24 inches (61 centimeters) will also inhibit extensive root growth and cause erosion, which brings invasive species. Many stated that regrowth of healthy, native vegetation would be difficult, if not impossible.

3.2.4.2 Responses

Threecorner Milkvetch Habitat

The Draft RMPA/EIS addresses impacts to the threecorner milkvetch from the Proposed Action as well as the All Mowing Alternative and the Hybrid Alternative, starting on page 3-48. Threecorner milkvetch habitat in the RMPA/EIS is defined as areas identified by the Hamilton and Kokos model as containing "known occurrences." Survey data can only be used for presence/absence analysis when multiple years of

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surveys have been completed, especially for annual species, and especially for annual species in the Mojave Desert, which has extremely variable precipitation patterns. Analysis of habitat loss using only one year of survey data is likely to vastly underestimate habitat loss for this species. Survey data can vary year to year due to fluctuations in weather (e.g., rainfall, temperature) and changes in aeolian processes. The model generally aligns with the current threecorner milkvetch occupancy based on the 2018 survey data and is assumed to be a good predictor of possible threecorner milkvetch occupancy in future years.

The analysis of threecorner milkvetch in the Final RMPA/EIS has been updated for clarity and understanding. The Proposed Action and action alternatives would have direct impacts ranging from 5 to 9 percent of the California Wash population group, and total (direct and indirect) impacts on 45 to 50 percent of the California Wash population group. The direct impacts of the Proposed Action and action alternatives would be a 2 to 3 percent loss of the remaining undeveloped modeled threecorner milkvetch habitat on BLM lands. The Proposed Action would directly and indirectly impact the largest acreage of threecorner milkvetch habitat of the analyzed alternatives, would disturb 12 percent of the total undeveloped habitat in Clark County.

The Draft RMPA/EIS identifies, “The Proposed Action would result in a net loss of habitat for the threecorner milkvetch.... Some actions would be taken to address some of the impacts caused by the Proposed Action, but these would not minimize or eliminate effects nor mitigate for the loss of habitat.... MM VG-2 includes numerous provisions for threecorner milkvetch habitat, including obtaining a permit for take of plants from the Nevada Division of Forestry for any [individuals] within the Project site prior to any ground disturbance, collection of seeds prior to ground disturbance,... seed storage by an approved botanical garden, on-site monitoring, removal of Sahara mustard, completion of herbicide treatment prior to March 15 and only using hand pulling thereafter, no use of aminopyralid in modeled threecorner milkvetch habitat (and Nye milkvetch habitat),... and WEAP training. Even with mitigation, direct impacts on occurrences and habitat of threecorner milkvetch would be adverse.” Refer to **Master Response 2: Mojave Desert Tortoise** for more information on which herbicides are permitted and how herbicides would be applied.

The Draft RMPA/EIS identified that the All Mowing Alternative and Hybrid Alternative would also still impact modeled threecorner milkvetch habitat. The soils would be left largely intact under these alternatives, allowing the species seed bank to potentially remain viable, although studies have not been done proving that the seed bank would be maintained. As stated in the Draft RMPA/EIS, “[v]egetation and drainage maintenance may minimize the hydrologic changes that would occur, which could also reduce impacts from changes in sand deposition. The solar arrays, however, may change aeolian processes that create the ideal habitat for this species. The likelihood of threecorner milkvetch growth within the mowed areas is unknown. Although it is unknown if threecorner milkvetch would grow on the Project site during O&M, mitigation measures that require the soils to be left intact [c]ould preserve habitat for the threecorner milkvetch such that the plant might eventually be able to recolonize the site.” The All Mowing Alternative would reduce effects on modeled threecorner milkvetch habitat since portions of modeled habitat in development areas D and E would not be developed, which has been clarified in the Final RMPA/EIS. The Hybrid Alternative would not reduce effects to threecorner milkvetch since traditional development areas correspond to the threecorner milkvetch habitat; however, mitigation was identified to reduce the effects. As stated on page 3-62 of the Draft RMPA/EIS, “[t]he use of drive and crush instead of disk and roll per MM VG-2 could reduce the potential for loss of habitat as well as off-site impacts. If soils and root systems are maintained in threecorner milkvetch habitat areas,

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native vegetation could regrow and thus reduce the potential for weed propagation. Soils and seed banks would [likely] not be destroyed with use of drive and crush, compared with disk and roll methods."

While not all modeled threecorner milkvetch habitat was avoided, the Hybrid Alternative and All Mowing Alternative were designed to avoid the highest density of identified threecorner milkvetch individuals and occurrences found during surveys, particularly in the eastern portion of development area C and all of development area F. A total of 1,102 individual plants were avoided in development area F and 139 were avoided in development area C.

Commenters suggested that seed collection does not work and should not be a mitigation. Although seed collection has not been tested on threecorner milkvetch, the method can be tested here, understanding that it may not be effective. The Site Restoration Plan and Long-Term Monitoring Plan would include measures for monitoring and reporting to track the outcome of seed collection and other methods employed. Impacts to threecorner milkvetch were fully disclosed in the Draft RMPA/EIS and identified as adverse, even for the mowing alternatives and with the mitigation, since the effectiveness of seed collection is unknown. Refer to the "Residual Impacts" discussions in Section 3.6: Vegetation and Jurisdictional Waters of the Draft RMPA/EIS. The Project footprint under the Proposed Action and action alternatives has been refined to limit impacts to sensitive species such as the threecorner milkvetch (e.g., all of development area F where the vast majority of threecorner milkvetch occurrences were found was excluded from any alternative, as previously stated).

Construction of the Project would result in a small conflict with approximately 20 acres (8 hectares) of the Clark County Public Lands Proposal (#26), which includes a proposal for an ACEC that overlaps with development areas D and E, as described on page 3-12 of the Draft RMPA/EIS and shown in Figure 3.0-1 of Appendix D. The overlap could be a mapping issue due to the scale. The BLM and Clark County would coordinate regarding the final boundaries of the Project and the ACEC to ensure that overlap is eliminated prior to issuance of a ROW to the Applicant.

Nye Milkvetch

Impacts to Nye milkvetch were addressed on page 3-29 of the Draft RMPA/EIS. Nye milkvetch is not on BLM Nevada's sensitive species list. It was included in the analysis because it is on BLM California's sensitive species list, but it is not afforded specific protections by BLM Nevada because it is not considered sensitive. Impacts were recognized as adverse for the Proposed Action where the entire site would be developed using traditional development methods. The impacts to Nye milkvetch for the All Mowing and Hybrid Alternatives were addressed on page 3-56 of the Draft RMPA/EIS. In mowed areas, milkvetch habitat, soils, and seed banks may be maintained. Indirect impacts could occur from weeds, which would be reduced through MM VG-1 and implementation of the Integrated Weed Management Plan. Nye milkvetch would be adversely affected in some areas of traditional development, primarily in the western portion of development area A. Avoidance of Nye milkvetch would require removal of most of development area A. In order to obtain the acreage needed, other acreages would need to be utilized that could have greater impacts to other species, such as desert tortoise if development areas G or B2 are utilized. Impacts were identified as adverse in the Draft RMPA/EIS.

Other Rare Plants

As described on page 3-44 of the Draft RMPA/EIS, three taxa of special status plants, threecorner milkvetch, Nye milkvetch, and rosy two-tone beardtongue, were positively identified within the study area during the Spring 2018 special status plant inventory. The Project would not impact other rare plant

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species. As detailed in Appendix A of the Botanical Resources Report, Gold Butte moss is the only other special status plant species that has a moderate–high potential to occur within the Project area, although none were observed during the special status plant inventory. All other special status plant species have a low or low–medium potential to occur.

Vegetation Communities

The Draft RMPA/EIS addressed the impacts to vegetation communities on page 3-47 for the Proposed Action, where it stated that "the majority of lost habitat would be the creosote-bush white bursage scrub vegetation community (6,524 acres [2,640 hectares]). Other vegetation communities that would be permanently impacted comprise smaller portions of the Project site, including 422 acres (170 hectares) of shadscale shrubland alliance and 77 acres (31 hectares) of catclaw acacia shrubland alliance. These vegetation communities also provide important habitat for wildlife species, from insects to birds to endangered species, including the Mojave desert tortoise, in addition to supporting native plants and sensitive plants. The vegetation types found on the Project site and the habitat they provide are common in southern Nevada but have been disproportionately impacted by ROW actions, off-highway vehicle (OHV) events and casual use, wildfires, and invasive species. MM WILD-1 requires reduction of the solar facility footprint to only the minimum size needed for Project operation; however, substantial, permanent loss of habitat would still occur." Mowing under the action alternatives would greatly reduce the amount of lost vegetation and plant communities, although these communities would still be altered.

Other commenters asked about impacts to microphyll woodland with catclaw acacia and desert willow. Catclaw acacia are associated with larger washes. Microphyll woodland and desert willow were not identified in the Project area. The largest washes are outside of the development areas. The catclaw acacia vegetation community within the development areas are shown on Figure 3.6-11 of Appendix D. Most of the vegetation community falls within the mowed areas under the Hybrid Alternative, where the vegetation is maintained. Impacts were acknowledged in the Draft RMPA/EIS.

Biocrust and Desert Pavement

Impacts to biocrust and desert pavement were addressed in Section 3.6: Vegetation and Jurisdictional Waters. Impacts are quantified for the Proposed Action, All Mowing Alternative, and Hybrid Alternative. Total avoidance is likely not feasible under the action alternatives. The Draft RMPA/EIS acknowledged loss of biocrust/desert pavement as adverse.

Biocrust impacts would be reduced in mowed areas and areas of drive and crush. The Site Restoration Plan requires that "[s]igns and possibly stakes will be used to delineate biocrust and desert pavement areas as special habitat to be avoided (if possible) during construction in the temporary disturbance and mowed areas. In temporary disturbance areas and mowed areas, protective mats will be used when driving or operating equipment over desert pavement. Biocrust that cannot be avoided in the temporary disturbance areas will be salvaged and returned during site restoration. If work must be conducted on these substrates, it will be limited to lighter equipment or to being conducted on foot. The appropriately sized equipment will be used in areas with biocrust and desert pavement to limit impacts from heavy equipment. Vehicles and equipment will stay in designated work areas and on established roads to reduce impacts to biocrust and desert pavement. Biocrust and desert pavement in the temporary disturbance and mowed areas will be monitored before, during, and after construction to document direct and indirect impacts. Significant stands of biocrust will be salvaged by hand or using very small equipment (e.g., a small backhoe). Biocrust will be placed in plastic buckets (dry) and stored until it can be restored to the areas it was removed from." To ensure that MM VG-1 in Appendix H is consistent with the Site

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Restoration Plan, the measure has been revised in the Final RMPA/EIS to indicate that significant strands of biocrust will be salvaged by hand or using very small equipment and stored until it can be restored to the areas from which it was removed.

The Draft RMPA/EIS also provided a detailed analysis of biocrust impacts from the Hybrid Alternative. The analysis identifies some loss of biocrust in mowed areas and up to 117 acres (47 hectares) of lost biocrust in traditional development areas and recognizes that the impact may be adverse. The Site Restoration Plan also states, “The areas identified during the botanical resources survey with the most biocrust and desert pavement are either excluded from the Hybrid Alternative (development area F) or have large portions designated for mowing (development areas B and D).... Impacts to native substrates, including biocrust and desert pavement, will be reduced in the drive and crush and mowed areas. Biocrusts and desert pavement will be inventoried during the Clearance Surveys throughout the Project Area; however, biocrusts and desert pavement in permanent impact areas subject to D-2 and D-3 disturbance levels will not be salvaged or restored.”

Invasive Plants/Weeds

Weed spread is greatest in traditional development areas and reduced in mowed areas. The analysis of weed spread in mowed areas was presented on pages 3-56 to 3-57 of the Draft RMPA/EIS. MM VG-1 in Appendix H includes considerable detail as to the measures required for reducing the potential for spread of invasive weeds, including in mowed areas. An Integrated Weed Management Plan is required and is available with the Final RMPA/EIS. Other measures include preparation and implementation of a PUP, mapping of weeds, clearing weeds from vector areas prior to ground disturbance, and monitoring for the 30-year life of the Project. Many additional provisions are included in MM VG-1, as shown in Appendix H. All weed treatments in mowed areas would be spot applications, which would minimize indirect impacts of herbicide on non-target native plant species that are important for desert tortoise. Only using herbicides as prescribed by the label would reduce indirect impacts to non-target native vegetation. Refer to **Master Response 2: Mojave Desert Tortoise** for more information on which herbicides are permitted and how herbicides would be applied.

Loss of Habitat

Mowing and other activities during construction of the solar arrays would result in some crushing of vegetation. The estimated amount of crushed vegetation is 20 to 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS. Page 33 of the Biological Assessment states that “[a] rough estimate of 20 to 25 percent of the vegetation is expected to be crushed in mowed areas by tracked vehicles to bring equipment to the array areas, to mow the facility, and to construct the tracker systems.” As stated on page 2-8 of the Draft RMPA/EIS, “[o]ne vehicle can likely access two solar array rows at a time so approximately 8 feet (2.4 meters) of vegetation would be crushed every 40 feet (12 meters) in a worst-case scenario in the mowed areas. From three to 10 passes are needed to install each set of solar array rows.” Other types of equipment, such as cranes, would be required during installation of solar equipment and would traverse the paths made by the equipment used to mow the vegetation. The assumption that the equipment would be able to reach either solar array row from between the rows is generally accurate. Mowing heads on a boom arm would be able to reach up to 20 feet (6 meters) on either side of the piece of equipment. The assumption of 8 feet (2.4 meters) of crushed vegetation accounts for one set of vehicle tracks down each row, accounting for the needs of the construction equipment. In the Final RMPA/EIS, to be consistent with the BA, the amount of crushed vegetation is described as 8 feet (2.4 meters) to 10 feet (3 meters) for every 40 feet (12 meters) or 20 to 25 percent of the mowed areas. The crushed vegetation is expected to recover over a number of years, based

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on evidence from other Mojave Desert solar facilities where vegetation was crushed and allowed to regrow (page 3-73 of the Draft RMPA/EIS). Perennial vegetation like yucca would be salvaged from areas where vegetation would be removed (i.e., equipment areas, roads) and replanted, or avoided in mowed areas per MM VG-1. Cacti are expected to re-sprout if trimmed to less than 18 to 24 inches (46 to 61 centimeters) (Refer to Section 3.6: Vegetation and Jurisdictional Waters for the full analysis). The vegetation beneath the body of equipment used for mowing and construction may be broken at the clearance height but would not be crushed or compacted. Vegetation with broken branches would grow back faster than the crushed vegetation, which is anticipated to grow back in a number of years.

The loss of native vegetation in areas of traditional development is acknowledged in the Draft RMPA/EIS as being adverse, as stated on pages 3-52 to 3-53: “With the soil disturbance and compaction from constructing the solar development areas, most of the native seed bank in the soil would not be viable, so adjacent seed sources would be needed for restoration, resulting in an adverse, indirect impact on adjacent vegetation communities where the seeds are sourced. Vegetation communities could take as long as a century to naturally and fully recover to pre-disturbance conditions. Given the number of weeds growing on site and the disturbance proposed, the restoration time may be even longer. The cacti and yucca removed from the site would probably never recolonize this 7,100-acre (2,873-hectare) area. Weed control would be difficult and inhibit restoration efforts. It is probable that the sensitive plant communities would not be able to re-establish, especially in the case of Nye milkvetch, where the soils are completely altered.” The impact is reduced in mowed areas as the extent of restoration needed would be greatly reduced since the native vegetation would be maintained from construction throughout the life of the Project. Page 3-58 of the Draft RMPA/EIS states, “Since vegetation would be maintained on the site throughout the life of Project, recovery after decommissioning would be faster than under the Proposed Action. Native seed banks and soils [may] be maintained over most of the Project site.”

3.2.5 Master Response 5: Old Spanish National Historic Trail

3.2.5.1 Comments

Regulatory and Policy Consistency

Commenters expressed concerns over the Project’s impact on the OSNHT, particularly since the Project area is identified as a High Potential Route Segment (HPRSEG) of the Trail. Key concerns were related to land use designations and policies, stating that the Draft RMPA/EIS did not identify how the Project was consistent with the National Trails Systems Act of 1968 and that the Project did not demonstrate compliance with BLM Manual 6280.

Impacts to the Setting of the Trail, Vicarious Experience, and Recreational Use

Specific concerns expressed by commenters included that the Project would have irreversible impacts to the setting of the OSNHT and, particularly, the vicarious experience. Commenters stated that the current setting and feeling of the site is largely identical to the setting and feeling that would have been experienced by original travelers along the Trail, which allows modern visitors to approximate an authentic Trail experience. The proposed solar panels and associated infrastructure will alter the setting and feeling of the site. Commenters requested that the Project be redesigned, an alternative identified, or measures implemented to lessen or avoid impacts on the OSNHT.

Commenters also expressed concerns over the recreational use of the Trail and that the proposed solar panels and associated infrastructure will restrict movement within the Trail corridor by creating one or

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two concentrated paths of travel that would not be reminiscent of the authentic Trail experience. Others stated that re-routing Old Spanish Trail Road under MM Recreation (REC)-1 provides insufficient mitigation of impacts to the OSNHT and will negatively affect the recreational trail experience.

Mitigation

Mitigation concerns were raised. Commenters requested mitigation measures be included in the Final RMPA/EIS to reduce adverse effects to the setting along the trail. Additional mitigation strategies should be considered for preserving the California Crossing High Potential Segment, including preparation and implementation of a Recreation and Trail Development Strategy for the entire segment of the OSNHT known as the California Crossing. This effort would maximize the visitor experience and protect the continuous nature of the historic route.

Historic Remnant and Physical Features of the Trail

Commenters stated that the Project would have adverse effects to the historic remnant of the Trail located in development area B, including loss of it as a recreational feature. Commenters suggested that it needs to be protected by a buffer. Commenters also stated the geological and pedological evidence of the passage of wagons along this stretch of the OSNHT would be permanently damaged by construction, and that erosion and dust would damage and bury visible surface evidence of the Trail.

3.2.5.2 Responses

Regulatory and Policy Consistency

Section 3.14: Old Spanish National Historic Trail of the Draft RMPA/EIS and the BLM Manual 6280 Inventory and Analysis provided detailed information on the effects of the Project and the alternatives on the OSNHT. The analysis was presented consistent with the National Trails Systems Act of 1968 requirements; however, the analysis also identified that the Project would result in “substantial interference” with the nature, purpose, and primary uses of the OSNHT during the Project's construction and operation. Since the Old Spanish Trail in this area is not a distinct path and very little to no physical evidence of the Old Spanish Trail was found during comprehensive surveys, the route is considered a corridor encompassing the entire valley. Since the resource includes the entire valley, over several miles in width, it is not possible to avoid the resource through mitigation or alternatives. The BLM and the Co-Administrators are collaborating under the Memorandum of Agreement (MOA) to determine other feasible measures to reduce impacts, consistent with the National Trails System Act. The alternatives that include mowing over a large portion of the site allow for site reclamation after the use. The BLM Manual 6280 allows “[c]onsiderations for evaluating proposals and granting authorization for foreseeable or temporary use and development, including those for removal and site restoration once the use terminates”, when designating National Trail Management Corridors. While a National Trail Management Corridor is not designated for this area, the guidelines suggest some allowance for projects that can be reclaimed after use.

Impacts to the Setting of the Trail, Vicarious Experience, and Recreational Use

Commenters stated that the setting of the Trail and thus the vicarious experience will be negatively affected by the modern intrusion of the solar facility. The comment is generally correct, but the current setting and feeling of the site is not identical to the setting and feeling experienced by travelers. Refer to page 3-143 of the Draft RMPA/EIS, which states that “the historic setting of the OSNHT is already slightly diminished by modern intrusions, including the Moapa Solar Project (built in 2014), the Moapa Paiute Travel Plaza, roads, I-15, and existing transmission lines.” The analysis in the Draft RMPA/EIS,

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however, still acknowledges the impacts to the setting of the Trail and the vicarious experience as being adverse and substantial.

Designating some routes that are more easily traveled, such as within the California Wash or along the unrelated Old Spanish Trail Road, would allow for continued recreational use and an experience of the Trail, but it would not be a complete experience. Visual impacts from the solar facility are minimized through travel in the California Wash due to topography, the traveler's inferior position in the wash, and wash vegetation. The Old Spanish Trail Road was addressed in the Draft RMPA/EIS, and supplemental information is provided in the BLM Manual 6280 Inventory and Impact Analysis that was incorporated into the Draft RMPA/EIS by reference. Page 3-3 of the Draft RMPA/EIS states that “within the corridor of the OSNHT is the Old Spanish Trail Road that can be accessed by properly equipped motorized vehicles (e.g., jeeps). This road is not linked historically to the OSNHT, nor to historical events associated with the trail, but provides proximal access and recreational value that could be utilized by those wanting to experience the trail.” Old Spanish Trail Road is not a historic route of the Old Spanish Trail. It only provides “proximal access and recreational value” because it can be driven (which is not a vicarious experience). Re-routing is a valid option to maintain that “proximal access and recreational value” within the same valley. It is not a measure to mitigate impacts to the OSNHT, nor is it presented as such in the Draft RMPA/EIS.

The visual impacts on the setting of the OSNHT for the Hybrid Alternative was identified as resulting in “substantial interference” during construction and operation and maintenance of the facility. The decommissioning analysis identified, “While 65 percent of the site could be restored to pre-Project conditions quickly, the remaining 35 percent could take over a century or longer to recover. MM VG-2 requires that the 35 percent of the site constructed by disk and roll be constructed by drive and crush, preserving the native vegetation roots, soils, and washes.” This statement has been corrected in the Final RMPA/EIS, as only areas of modeled threecorner milkvetch habitat would be constructed via drive and crush in the traditional development areas. The remaining approximately 2,000 acres (809 hectares) would be constructed using traditional methods, which could have long-lasting impacts on the trail. To mitigate this impact, measures have been added to the Final RMPA/EIS that, immediately after construction, areas constructed using disk and roll under the Hybrid Alternative should begin to undergo reclamation of native vegetation, so that at decommissioning the traditional areas could potentially be restored. Impacts may still be adverse for the Hybrid Alternative after decommissioning but would be less adverse than for the Proposed Action since at least 70 percent of the site would be native vegetation at decommissioning.

The request to implement on-site mitigation to fully minimize or avoid impacts on the OSNHT corridor is not feasible. The OSNHT corridor encompasses the entire valley of the 44,000-acre (17,806-hectare) application area and, therefore, cannot be avoided with an alternative. As stated on pages 3-130 to 3-132 of the Draft RMPA/EIS, the mowing alternatives preserve some of the components of the Old Spanish Trail that are important, including vegetation, contours, soils, and wildlife. While this method of construction reduces some impacts, it does not diminish the adverse impacts substantially during Project operation. The impact has been identified as a substantial interference with the purpose, nature, and uses of the OSNHT during the operation of the facility. After site reclamation, these impacts would diminish. Adverse effects would remain following reclamation for the Proposed Action and Hybrid Alternative but would be eliminated for the All Mowing Alternative.

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Mitigation

Commenters requested additional mitigation to reduce effects to the setting of the Trail. Additional mitigation strategies are being considered during the development of the MOA with the NPS Old Spanish Trail Administration Office, in consultation with the BLM Old Spanish Trail Administrator. The MOA will define additional measures to minimize effects to the OSNHT and its nature and purposes and primary uses. The BLM, State Historic Preservation Office (SHPO), Old Spanish Trail Association (OSTA), and federal OSNHT administrators (BLM and NPS) are also developing an Historic Properties Treatment Plan (HPTP) that will address adverse effects on historic properties resulting from the Project. Under the National Historic Preservation Act of 1966 (NHPA) Section 106 process, the BLM is consulting with the SHPO/Tribal Historic Preservation Officer and other parties to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties, including the historic segment of the OST in development area B, should it be eligible for listing in the National Register of Historic Places (NRHP).

Additional measures have been added to the Final RMPA/EIS, including two mitigation measures in addition to those already required in the Draft RMPA/EIS: 1) capture on-site imagery prior to project implementation to facilitate the creation of an interpretive “virtual” tour of the California Crossing High Potential (HP) Segment (e.g., Google Earth Street View or similar perspective imagery coupled with additional interpretive digital media content development or potentially even virtual reality), 2) produce other interpretive media that creates a literary vicarious experience (e.g., digital media, novel, graphic novel, short story, picture book, etc.), 3) identify any Old Spanish Trail rock art and photograph, log, and collect global positioning system (GPS) data on these sites, 4) reprint the publication *The Old Spanish Trail Across the Mojave Desert* and provide to local schools as well as offer for sale at several locations, and 5) research, identify, and produce a social media site for the Nevada Chapter of the OSTA. The voluntary compensatory mitigation from the Applicant has also been increased to \$250,000, which will allow for a substantial increase in educational and preservation opportunities for the OSNHT in the region, including providing the support needed for Boy Scout projects on the OSNHT identified by the OSTA that otherwise would not be implemented. This support would have a positive impact on documenting and, thus preserving, the history of the Trail in this region.

Historic Remnant and Physical Features of the Trail

Commenters were concerned over the destruction of surface evidence of wagons along the historic remnant in the Project site. The historic remnant of the Old Spanish Trail, however, is currently disturbed, and no surface evidence of the Trail is currently found along the remnant. This remnant is the 5,843-foot segment within the Project area identified by the study performed under the American Recovery and Reinvestment Act of 2009 (ARRA). This segment has since been converted into a “well-used modern two-track road,” as stated on page 3-124 of the Draft RMPA/EIS. This modern two-track is currently accessible to the public, and access would be cut off during construction and operation of the facility. The road can be avoided during engineering such that it could be restored to public use after decommissioning of the facility, which may be determined to be a required measure to reduce effects during the consultation with SHPO.

The initial recommendation is that the segment is a contributing segment of the Old Spanish Trail/Mormon Wagon Road because it was found to have retained the integrity of location, setting, feeling, and association rather than design, materials, and workmanship as the appearance and current use of the segment has deteriorated in condition and original appearance (e.g., no wagon wheel ruts are evident, no artifacts are found). The impacts to the setting cannot be avoided. While physical evidence of

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the Old Spanish Trail is minimal, the Draft RMPA/EIS and BLM Manual 6280 Inventory and Analysis incorporated by reference into the Draft RMPA/EIS concludes that the solar development would result in substantial interference with the land use designation of the area as a HPRSEG of the OSNHT due to the fact that it introduces modern features into the otherwise natural landscape.

There is no geologic, pedological, or surface evidence of passage of wagons in the Project area. None of the typical evidence of the Old Spanish Trail has been identified in this area, such as paths through vegetation, shallow swales, vegetation changes, axe-cut branches, rock cairns, masonry walls, wagon wheel ruts, wagon hardware, horseshoes, mule shoes, nor were historic accounts or drawings clearly identifying use of this valley available. The 5,843-foot (1,781-meter) segment within the Project area has been turned into a modern two-track road, as previously discussed. No artifacts, wagon ruts, or any other evidence of the Old Spanish Trail is found in association with this segment anymore. No other physical evidence or artifacts of the Old Spanish Trail were found during comprehensive Class III surveys of the Project area.

3.2.6 Master Response 6: Change to Visual Resource Management Class and Visual Impacts

3.2.6.1 Comments

VRM Class and Visual Impacts

Commenters were concerned that although the lands directly impacted would be in the VRM III Class Objective, the massive size of the Project would impact other conservation and specially designated areas in the region, including the Muddy Mountains Wilderness Area, the Bitter Springs Backcountry Byway, California Wash, the Old Spanish Trail, and as far away as the Desert National Wildlife Refuge. Commenters thought the Project should be reviewed for visual impacts under VRM II and even VRM I standards. Other commenters felt the VRM Class should not be downgraded to VRM IV.

Mitigation Feasibility

Other comments were made regarding the feasibility of some of the components of the visual resources' mitigation proposed. Concerns included that varying access roads to be non-linear could be unsafe and require use of more land and that painting solar panel frames, trackers, and power conversion stations (PCSs) could affect performance of panels, cause overheating, and void warranties that assure the safety of the systems.

3.2.6.2 Responses

VRM Class and Visual Impacts

Effects of the Project on scenic quality and viewers were analyzed in Section 3.10: Visual Resources of the Draft RMPA/EIS. Supplemental information is provided in the Visual Resources Technical Report regarding the setting, methods, and impacts. The 1998 LVRMP classifies the right-of-way application area as a Class III VRM area. The objective of VRM Class III is to partially retain the existing landscape character, and for this reason the level of visual change in VRM Class III areas should be moderate. Management activities may attract attention but should not dominate the casual observer's view of the area. Visual changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. The analysis of visual contrast and management class must be made using the existing VRM Class in the area, which is a VRM Class III.

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The impacts to other conservation and specially designated areas, such as the Muddy Mountains Wilderness Area, the BSBCB, the Old Spanish Trail, and more distant locations were assessed in the Draft RMPA/EIS and the Visual Resources Technical Report. The analysis concluded that the Project is only visible within the immediate vicinity of the Project and only from within the valley. Table 3.5-2 in the Visual Resources Technical Report, on pages 3-39 to 3-41, provides the percent of the Project features that are within a 25-mile viewshed. The Draft RMPA/EIS identifies on page 3-112: “Impacts would depend on viewer sensitivity and the perceived contrasts created by the Project site. Visual contrast would be low to moderate, and thus impacts on viewers with high sensitivity to visual contrast would be low to moderate on the following:

- California Wash
- Old Spanish Trail Road
- Valley of Fire Road between BSBCB and the Muddy Mountains
- BSBCB
- Colorock Quarry Road
- Arrowhead Trail

Impacts to these viewers were assessed in accordance with the VRM requirements of BLM Manual 8431, as described in the Visual Resources Technical Report and Draft RMPA/EIS.

The change in VRM Class in the Project area from a Class III to a Class IV is proposed to be compatible with the solar development and particularly the visibility of the proposed transmission structures. As discussed in Table 3.10-1 of the Draft RMPA/EIS, with implementation of mitigation measures, the Project solar facilities would result in a moderate degree of visual contrast, which is compatible with VRM Class III. However, the contrast along I-15 would remain strong because large gen-tie structures would still be present in the foreground–middleground of views from I-15 where the gen-tie crosses the highway to reach Crystal Substation. The Project requires an RMP amendment due to the gen-tie structures and associated views from I-15, not because of the solar panels.

The analysis of the visual impacts on motorists traveling on Valley of Fire Road were addressed on page 3-108 of the Draft RMPA/EIS as follows: “Motorists and recreationalists traveling on Valley of Fire Road towards Valley of Fire State Park or BSBCB would notice, for a few minutes, the perimeter fences, access roads, solar arrays, collector system, and O&M facilities in the foreground–middleground and other Project facilities in the foreground–middleground and background, including substations and gen-tie lines (refer to Figure 3.10-53). Perimeter fences, access roads, solar arrays, and collector system features in the foreground–middleground (within 0.5 mile [0.8 kilometer]) of Valley of Fire Road would not dominate views due to their relatively low height.” Additional analysis was provided in Table 3.10-1 of the Draft RMPA/EIS. Mitigation would reduce strong contrast along Valley of Fire Road to moderate, making the Project compatible with VRM Class III. The contrast along I-15 would remain strong because large gen-tie structures would still be present in the foreground–middleground of views from I-15 where the gen-tie crosses the highway to reach Crystal Substation. Even with mitigation, residual visual impacts would remain on scenic quality and on viewers due to the substantial development of an otherwise undeveloped natural desert landscape.

Table 3.10-1 of the Draft RMPA/EIS identifies that the degree of visual contrast created by the Project as viewed from Colorock Quarry Road (at the border of the Muddy Mountains Wilderness Area) would be weak. No adverse effects on Wilderness Areas would occur. The degree of visual contrast created by the Project as viewed from the BSBCB would be moderate prior to mitigation and weak-to-moderate with

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mitigation. Visitor's experiences when traveling on the BSBCB would be disrupted by the view of the Project only when in close proximity to the Project (within 0.5 mile [0.8 hectare]). The Project is not visible from the Desert National Wildlife Refuge due to distance and intervening topography (page B-11 of the Visual Resources Technical Report).

Mitigation Feasibility

Concerns over mitigation feasibility were considered. Due to the suite of mitigation available to reduce adverse visual impacts, removal of the suggestions to paint panel frames and other electrical features and offsetting the access roads is allowable and does not change the contrast and visual impacts of the solar panels. In most instances, the distance and low profile of the solar panels resulted in a low or low-to-moderate contrast, even without any mitigation, in compliance with VRM Class III. The mitigation measures have been revised and clarified as part of the Final RMPA/EIS. MM VR-2 has been revised to exclusively require the buildings at the O&M area and the water tanks to be painted in accordance with BLM's Standard Environmental Colors chart. Language has been incorporated into MM VR-1 requiring that where options are provided by the manufacturer for other equipment and facilities, the least reflective and contrasting color or patina must be used. MM VR-1 has also been revised to eliminate the requirement for varying the internal grid layout of array blocks and access roads within the Project site due to the identified concerns regarding efficiency, safety, and emergency response. MM VR-1 has been revised to require the boundaries of the development areas and other linear features (e.g., gen-tie lines) to follow the natural contours and avoid linear edges, to the greatest extent feasible.

3.2.7 Master Response 7: Impacts to Recreation

3.2.7.1 Comments

Recreational Experience

Comments on recreation focused on negative impacts on access and visual quality of the recreational experience along Arrowhead Trail and BSBCB and while driving towards Valley of Fire State Park. Several comments expressed concern that the Project would reduce visitorship to the Muddy Mountains Wilderness Area and Valley of Fire State Park due to these impacts. A commenter stated that Valley of Fire is a National Natural Landmark, and that to put a massive solar field at the entrance to a National Natural Landmark seems to contradict the very existence of such a landmark. The commenters felt that the Project would destroy the view and experience from several popular locations including the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the BSBCB. Many commenters were concerned about impacts to Valley of Fire State Park and to views when traveling to Valley of Fire State Park.

Loss of Recreational Land

Others felt that public land that currently allows recreational and/or motorized travel should not be impeded and that the footprint of the Project should be reduced so that it does not impede current recreational use and access.

Traffic Impacts on Access to Recreational Areas

Traffic impacts on recreational access along Valley of Fire Road were also identified as a concern, particularly during construction.

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3.2.7.2 Responses

Recreational Experience

Access to Valley of Fire State Park and Muddy Mountains Wilderness area would not be impeded by the Project, as was addressed on pages 3-16 and 3-17 of the Draft RMPA/EIS. No impacts to recreation in the Muddy Mountains Wilderness Area or Valley of Fire State Park would occur as the area does not overlap with the Project, and the Project would not sever access.

Valley of Fire State Park is outside of the Project viewshed, and the Project would not be visible to users of the park (Figure 3.10-1). The Project would not affect the scenic quality of Valley of Fire State Park. Some impacts along the initial stretch of Valley of Fire Road towards and returning from Valley of Fire State Park and the Muddy Mountains would occur but would occur only when the motorist is in close proximity to the solar field, near I-15 (as discussed on pages 3-108 to 3-113 of the Draft RMPA/EIS). As discussed in Table 3.10-1 on page 3-109 of the Draft RMPA/EIS and shown in the visual simulations provided in Appendix D, from Key Observation Points (KOPs) 15 and 19, near the Muddy Mountains and Muddy Mountains Wilderness Area, the degree of contrast created by the Project after mitigation would be weak. Recreationalists traveling to the park would see the Project for a short time right after turning onto Valley of Fire Road, near I-15, and when returning out of the park. The solar facility's visibility is minimal until the viewer is within approximately 0.5 mile (0.8 kilometer) of the facility, including along the BSBCB. Viewer's sensitivity and expectations of a natural landscape are reduced as the viewer leaves or approaches I-15. While visual impacts would be adverse in the immediate vicinity of the solar facility along Valley of Fire Road, these impacts are not anticipated to have any effects on visitorship to Valley of Fire State Park, BSBCB, or the Muddy Mountains since the Project would only be visible for a relatively short time and access would not be impeded. Recreational users of the Muddy Mountains and Valley of Fire State Park would be minimally affected. Refer to **Master Response 6: Change to Visual Resource Management Class and Visual Impacts** for more information on visual impacts.

Section 3.12: Cultural Resources analyzes indirect effects on the historic Arrowhead Trail Highway/Old Highway 91 in the area. The Project was found to have an adverse indirect visual effect on the historic Arrowhead Trail Highway because the Project would create some visual contrast as seen from the road. The indirect impacts on this site would be addressed under the MOA and HPTP with SHPO.

Loss of Recreational Land

The Draft RMPA/EIS describes existing recreational uses on pages 3-14 to 3-15 as follows: "The most common recreational activities likely to occur in the Project area include OHV use and potentially camping, hiking, and shooting. All access routes in the Project area are designated as limited. OHV travel in the Project area is limited to existing roads, trails, and dry washes. Recreationalists may travel through the Project area on their way to sites in the Muddy Mountains."

The Project would result in the loss of recreational access within the 7,100-acre (2,873-hectare) Project footprint. The finding presented in the Draft RMPA/EIS is the following: "The loss would not be substantial, as many other similar areas are available for these activities in the vicinity and greater region. For example, the Southern Nevada extensive recreation management area (ERMA) is 2,518,035 acres (1,019,13 hectares) in size. The Project represents only 0.3 percent of the ERMA."

The Project would result in the loss of some OHV areas. As discussed on Page 3-16 of the Draft RMPA/EIS, the Project would result in the closure of 46 miles (74 kilometers) of OHV trails. However,

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other OHV tracks are available in the ROW application area and in the greater Clark County area, and OHV use would continue in the larger ROW application area outside of the facility footprint. The current footprint was not reduced to allow for recreational access as the remainder of the 44,000-acre (17,806-hectare) application area would be available for recreational use.

Access to Recreational Areas

Concerns over traffic impacts to Valley of Fire Road were addressed in the Draft RMPA/EIS. Temporary traffic impacts could occur as a result of Project construction. As discussed on page 3-161 of the Draft RMPA/EIS, during the peak construction period, the analysis area roadways and highways (which include I-15 and Valley of Fire Road) would continue to operate acceptably, with a volume lower than the Level of Service (LOS) C capacity. Temporary traffic impacts could occur as a result of Project construction, as noted on page 3-16 of the Draft RMPA/EIS; however, access to Valley of Fire State Park would not be severed. Traffic control would be implemented under a Traffic Management Plan as required under MM Transportation (TRA)-1 in Appendix H. Once the Project is operational, traffic impacts would be minimal.

As discussed on page 3-16 of the Draft RMPA/EIS, access along Arrowhead Trail and Bitter Springs Backcountry Byway would not be affected by the Project and access would remain the same as existing conditions. The Project would sever direct access along Old Spanish Trail Road through development areas D and E, cutting off access between Old Spanish Trail Road and Valley of Fire Road. MM REC-1 would minimize adverse effects on recreational access along Old Spanish Trail Road within the Project area by rerouting the road, through signage, to either the California Wash or the Arrowhead Trail. Alternate connections to Valley of Fire Road, I-15, and BSBCB would be provided. The detoured routes would be longer but would still provide for recreational access and would not sever access to the BSBCB, the Muddy Mountains, Valley of Fire State Park, or I-15.

3.2.8 Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust

3.2.8.1 Comments

Flooding and Changes in Drainage Patterns

The Moapa Band of Paiutes expressed that the Project could result in an increased risk of damaging flood events where the California Wash flows through the reservation and would have effects to human health and safety. Other comments were also received stating that planning based on a 100-year floodplain analysis is insufficient and that analysis for the 500-year event should be provided due to significant flooding concerns.

Erosion

Numerous commenters stated that the Project would result in significant erosion. One commenter noted that the configuration of the solar panels will drastically alter runoff patterns. This could cause great erosion and possibly encourage the growth of non-native and invasive plants.

Dust

Concerns were raised that mowing will create a large amount of fugitive dust. Others felt that construction would generate windblown dust that would be hard to control, as seen on other solar construction projects. Commenters were concerned that increased dust could accumulate on plants and

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reduce photosynthesis. Others noted that removal of dust control chemicals in soils applied during the life of the Project was not addressed.

The Moapa Band of Paiutes also had concerns over fugitive dust. The tribe has their own dust control ordinance on par with Clark County's dust control regulations and stated that their ordinance should be considered in BLM's analysis and ensure that the Project's impacts meet their standards.

3.2.8.2 Responses

Flooding and Changes in Drainage Patterns

The Moapa Band of Paiutes were the primary commenters to express flooding concerns, although the issue was raised by a few other commenters as well. The Drainage Study and Section 3.5 Water Resources of the Draft RMPA/EIS addresses flooding impacts. Under the Proposed Action and each alternative, downstream flow increases were modeled. The Proposed Action required drainage infrastructure (e.g., berms, channels) to reduce flows and ensure that flooding near the Moapa Paiute Travel Plaza and the undercrossing of Valley of Fire Road near the plaza does not occur. The mowing alternatives would reduce flow rates "because the facility would be constructed to leave the vegetation in place under the solar arrays.... Runoff flows would be most similar to existing conditions...." Off-site flow rates are anticipated to be the same for the All Mowing Alternative but could increase in the California Wash by up to 500 cubic feet per second (cfs) (14 cubic meter per second [cms]) for the Proposed Action and approximately 320 cfs (9 cms) for the Hybrid Alternative. As stated in the Drainage Study, on pages 20 to 21, "The flows would continue in these small washes until they converge into the West Tributary of the California Wash approximately one mile to the north of the project boundary on the Moapa River Indian Reservation. From here, the main branch of the California Wash flows north to the Muddy River approximately 13 miles further north, crossing under the I-15 approximately six miles north of the project boundary. Increased flow (of up to 500 cfs) from development of the site is expected to have a negligible effect on downstream washes due to the total size of the California Wash watershed, which increases substantially downstream of the project to tens of thousands of cfs." Human health and safety would not be impacted as the nearest residences on the tribal land are more than 13 miles (21 kilometers) away. Increases in flows from the Project would not be so substantial as to impact residential areas on the Moapa River Indian Reservation. The Moapa Paiute Travel Plaza would not be impacted by flooding caused by the Project, as analyzed in the Draft RMPA/EIS.

The definition of a 500-year flood is for a one in 500 annual chance of the flood hazard. Over the 30-year life of the Project, there is a six percent chance that such a flood would occur and a 94 percent chance that it would not. The Draft RMPA/EIS is correct in noting that such events are expected to be rare. There is no legal requirement to design to a 0.2-percent-annual-chance of flood in this case. MM WR-1 has been revised in the Final RMPA/EIS to indicate that the Applicant shall conduct modeling for the 500-year floodplain at the request of the Federal Emergency Management Agency (FEMA) or Clark County. As stated on page 3 of the Drainage Study, "The (Clark County Regional Flood Control District [RFCDD]) is responsible for the review and approval of all drainage plans and studies within their boundaries. Applicants must submit development proposals to the District for review if the development has regional flood control significance, meaning those facilities, land alterations, portions of the natural drainage system, and regulatory actions that impact the implementation of the Master Plan, or lie within Special Flood Hazard Areas." Additional drainage studies will be required with final engineering. The Project washes will require remapping under FEMA and will be subject to Clark County RFCDD review to ensure that impacts, particularly off-site flooding, do not occur.

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Erosion

Many commenters were concerned about erosion caused by the Project. Erosion was addressed in the Draft RMPA/EIS in Section 3.3: Geology, Soils, and Mineral Resources and Section 3.5: Water Resources. Measures to minimize erosion stated on page 3-36 of the Draft RMPA/EIS include “MM GS-1...[which] requires erosion control and bank stabilization devices to be installed in and around on-site and off-site washes (subject to appropriate permits). The measure also requires routine site inspections to identify and repair areas of erosion such as deep rills and gullies in the panel arrays and to maintain, change, or add additional erosion control features if needed (in accordance with required permits).” With erosion control, stormwater runoff is not anticipated to result in significant erosion, particularly in mowed areas where existing vegetation, contours, and hydrology are maintained.

The ultimate flow paths of stormwater are determined by gravity and the ground surface and not the angle of the panel. Stormwater flows northward in this area, towards the Muddy River, over 13 miles (21 kilometers) away. Erosion is addressed in the Drainage Study and erosion from stormwater flowing overland was addressed on page 3-22 of the Draft RMPA/EIS. The analysis states that “[i]ncreased erosion on the Project site from stormwater overland flows could result in increased deposition of fine-grained sediments into the surrounding washes, which would likely flow downstream and off site before settling out of the washes. Because no uses such as agriculture or built structures are located downstream for up to 13 miles (21 kilometers), periodic increases in fine-grained sediment loads and deposition are not expected to have adverse effects. Deposition of fine sand could have beneficial effects on sensitive plant species, such as threecorner milkvetch. The washes in the region generally move large quantities of all sizes of sediment as part of the natural desert processes, changing course and depositing soils during large storm events. Adverse effects from increases in transport of fine-grained sediment are not expected.”

Dust

Fugitive dust was quantified in Section 3.9: Air Quality and Climate Change of the Draft RMPA/EIS for construction and operation, including mowing. The All Mowing Alternative would result in less fugitive dust generation than the Proposed Action. MM Air Quality (AQ)-1 includes numerous emissions controls to reduce fugitive dust, and a Dust Control and Air Quality Plan would be required. As discussed on page 3-94 of the Draft RMPA/EIS and detailed in Appendix H, MM AQ-1 requires the Dust Control and Air Quality Plan to include several fugitive dust and equipment controls to be implemented during construction. The localized maximum ambient concentrations for particulate matter (PM)₁₀ and PM_{2.5} associated with construction of the Proposed Action would be reduced to less than the National Ambient Air Quality Standards (NAAQS)/ State Ambient Air Quality Standards (SAAQS) with implementation of this mitigation measure, as shown in Table 3.9-2 on page 3-96 of the Draft RMPA/EIS. For the action alternatives, localized maximum ambient concentrations for PM₁₀ would exceed NAAQS/SAAQS with implementation of mitigation measures only at the gen-tie lines. Concentrations would diminish to below air-quality standards 200 meters away from the gen-tie lines (Ratte 2019).

Dust palliatives may be used in traditional development areas but would not be used in mowed areas. Dust palliative containment on the Project site is required and was addressed on page 3-37 in terms of ensuring that dust palliatives do not end up in stormwater runoff. Page 3-37 of the Draft RMPA/EIS states, “Dust palliatives and herbicides can mobilize into stormwater and cause downstream water quality impacts. To minimize those impacts, MM WR-2 requires a Stormwater Quality Monitoring Program that involves using BLM-approved dust palliatives, periodically testing stormwater quality to verify that impacts are not occurring and making changes to the applications that minimize effects if identified. The

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program would specify the testing procedures for stormwater quality, frequency, constituents tested, and reporting requirements, including the agencies to which the results must be reported. If standards for water quality are exceeded, the monitoring program requires modification to the palliative use in consultation with BLM.”

Site reclamation after decommissioning of the Project generally addresses the restoration of disturbed areas that could be impacted by dust palliatives even though not directly called out in the Draft RMPA/EIS. Page 3-53 of the Draft RMPA/EIS states, “Prior to an NTP, a Site Restoration [Reclamation] Plan would be prepared and approved. Implementation of this plan would reduce some of the adverse impacts on native vegetation through the restoration of areas to pre-construction conditions; however, it could still take at least a century to return the site to near pre-disturbance conditions.” Some clarifications have been made in the Final RMPA/EIS that the Decommissioning and Site Reclamation Plan would also address soil reclamation to allow for the restoration of the area to pre-construction conditions, as needed.

The Project would require a Surface Area/Dust Mitigation Control Plan under Clark County Department of Air Quality and Environmental Management. The regulation of air quality impacts is under the jurisdiction of Clark County and would be implemented and enforced through a binding authorization from the County. The BLM would not have primary responsibility for compliance but could report to the County any violations of the Project's Surface Area Disturbance/Dust Mitigation Control Plan, permitted under Clark County. The need for real-time PM₁₀ dust monitoring could be determined by Clark County and, if required, would be installed. Since the Project would be held to the standards of the County's requirements, which are on par with the tribe's ordinance, dust control should be in compliance with the tribe's ordinance.

3.2.9 Master Response 9: Tribal Concern

3.2.9.1 Comments

Traditional Values and Resources

Tribal concerns were raised by the Colorado River Indian Tribe (CRIT) and the Moapa Band of Paiutes. Tribal concerns related to individual environmental resource topics are covered under those topics in these Master Responses. General Native American Concerns were related to traditional values and cultural ways. CRIT were concerned that descriptions of the impacts to Native American religious and cultural concerns were not substantiated. They identified that significant portions of public and private lands in California, Arizona, and Nevada represent cultural landscapes that remain imbued with substantial cultural, spiritual, and religious significance for the tribes' current members and future generations. The tribes have a strong interest in ensuring that potential cultural resource and other environmental impacts associated with the Project are adequately considered and mitigated. The Moapa Band of Paiutes expressed concern over the large size of the Project, adjacent to the tribe's reservation, and that all the Project lands are within the tribe's judicially established aboriginal lands and within its prior two-million-acre (0.8-million-hectare) reservation, where the tribe has practiced its subsistence, religious, cultural and other ways of life for centuries. The Moapa Band of Paiutes also stated that the Project area includes many places that are important to the tribe for religious and cultural purposes.

Cumulative Impacts

The tribes were also concerned with the cumulative impacts of numerous projects on their traditional lands and values, including Tribal Cultural Properties (TCPs).

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Archaeological Resources and Monitoring

The tribes remain concerned about potential removal of artifacts from the Project area and the corresponding destruction of the tribes' footprint on the landscape. In particular, CRIT stated that they appreciated efforts to minimize cultural resource harms in MM Cultural Resources (CR)-2 but strongly oppose the use of data recovery as a mitigation measure on the grounds that such excavations undermine the tribes' connection to their ancestral homeland. They suggested that MM CR-2 should accordingly be revised to encourage in-situ or on-site reburial where avoidance is not possible.

Consultation

The tribes included requests for government-to-government consultations under Section 106 of the NHPA and questioned the accuracy of stated consultations in the Draft RMPA/EIS.

Environmental Justice

The Moapa Band of Paiutes expressed concern over securing Tribal member employment on projects located near the Reservation. These projects would be a great source of employment for Tribal members. The tribe applies its Tribal Employment Rights Ordinance to all contractors within the Reservation, yet application off Reservation requires the willingness of project developers, prime contractors, and unions. The tribe was also concerned over revenues from the Moapa Paiute Travel Plaza, and that any traffic impacts that make it difficult to access the Moapa Paiute Travel Plaza are extremely problematic for the tribe.

3.2.9.2 Responses

Traditional Values and Resources

An analysis of tribal cultural resources and impacts was presented in Section 3.13: Native American Concerns of the Draft RMPA/EIS (updated to Section 3.13: Native American Religious Concerns in the Final RMPA/EIS). Explanations for conclusions were substantiated in this section. For example, the Draft RMPA/EIS stated on page 3-134: "Most of the site (over 90 percent) is comprised of creosote-white burrobush shrubland alliance, which includes traditional medicinal plants such as burro bush (*Ambrosia dumosa*), creosote bush (*Larrea tridentata*), and saltbush (*Atriplex spp.*) (Phoenix Biological Consulting 2018a). Food sources including cholla cactus (*Cylindropuntia spp.*), catclaw acacia (*Acacia greggii*), desert trumpet (*Eriogonum inflatum*), Anderson thornbush (*Lycium andersonii*), and yucca (*Yucca spp.*) are found throughout the Project site as well. Medicinal plants including Mormon tea (*Ephedra sp.*) and saltbush are also found on the Project site. These plants are all common and found throughout the region. While construction and subsequent operation of the Project would render approximately 7,100 acres (2,873 hectares) of lands inaccessible, the surrounding areas contain tens of thousands, if not hundreds of thousands, of acres of similar types of habitat and vegetation—particularly on the Moapa River Indian Reservation to the north of the Project site—that support these traditional plants...No concerns regarding medicinal plants or plants used as food sources were expressed during BLM consultation with the Native American tribes." The mowing alternatives would reduce impacts to plants and vegetation communities by retaining them on site such that the site or a large portion of the site could be reclaimed after decommissioning.

The Moapa Band of Paiutes was consulted during the Project planning and during the Class III survey work for the Project. The Moapa Band of Paiutes did not identify any specific areas within the Project site or area of religious importance to the consulting survey team led by A.J. Thompson of Knight & Leavitt nor during Section 106 government-to-government consultations with the BLM. The archival records

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searches, conducted through the Nevada Cultural Resources Information System (NVCRIS), the Nevada SHPO, and the Southern Nevada Archaeological Archive Database, did not reveal any other locations of significance.

Cumulative Impacts

The tribes expressed concerns over the impacts of the Project on natural lands adjacent to the reservation. The Project analysis focused on the relative abundance of the vegetation and wildlife in the region, tempering the impact. CRIT were concerned about cumulative impacts and asked for quantification of impacts across cumulative projects. The Draft RMPA/EIS does not quantify the general vegetation and habitat impacts of other solar projects but noted on page 3-134 that the region includes thousands if not hundreds of thousands of acres of similar habitat. Quantification of impacts to desert tortoise habitat (which includes the creosote burrobush habitat in the Project area) from cumulative projects was, however, presented in Section 3.8: Threatened, Endangered, and Candidate Species, on page 3-85 of the Draft RMPA/EIS. The analysis states, "Solar projects, therefore, could cumulatively result in approximately 15,000 acres (6,070 hectares) of impacts, or 0.6 percent of the regional habitat, with the Gemini Solar Project, along with the Moapa Solar Project...." A cross reference to the analysis of cumulative impacts in Section 3.8: Threatened, Endangered, and Candidate Species has been added into Section 3.13: Native American Religious Concerns in the Final RMPA/EIS.

CRIT were also concerned about the cumulative impacts to TCPs and that the Draft RMPA/EIS states cumulative impacts would not be substantial without identifying TCPs on other projects. The analysis as presented in the Draft RMPA/EIS, however, does not state that cumulative impacts would not be substantial. The Draft RMPA/EIS states on page 3-136: "Cumulative projects could affect known and unknown TCPs, resulting in a cumulative loss of resources considered by local tribes to be significant." The Project would avoid impact to TCPs, as the one TCP in the Project Study Area would be outside of the Project site, per the alternatives or the mitigation (for the Proposed Action). The conclusion in the Draft RMPA/EIS is that "the Proposed Action's contribution to the cumulative loss of known and unknown TCPs would be minimized with implementation of MMs CR-1 and CR-2, which require the avoidance of known TCPs and handling procedures for the discovery of cultural resources, as well as cultural resources worker awareness training." TCP impacts of other projects are not quantified since the Project would not impact TCPs and, therefore, could not contribute to a cumulative impact.

Archaeological Resources and Monitoring

The tribes are concerned with the treatment of any prehistoric/Native American resources found on the Project site. Three prehistoric artifacts were identified within the Proposed Action and the alternatives footprints. MM CR-2 in Appendix H includes a requirement for a Cultural Resources Monitoring and Mitigation Plan, which must be approved by the BLM prior to construction. The measure, as written, requires that "the BLM shall consult with appropriate Native American representatives in determining appropriate treatment for the prehistoric cultural resource sites." This provision allows the tribes to recommend in-situ or on-site reburial, depending on the resource identified.

Environmental Justice

The Moapa Band of Paiutes expressed concerns about environmental justice impacts and job opportunities for the tribe. The Draft RMPA/EIS acknowledges that the Project would provide job opportunities for the Moapa Band of Paiutes, as stated on page 3-156 of the Draft RMPA/EIS: "Construction would provide job opportunities for up to 900 people during the peak construction period. Most of these temporary workers would reside in the Las Vegas area. Native Americans are expected to

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comprise part of the workforce needed during construction. The Proposed Action would not disproportionately affect the minority and low-income population of Native Americans on the Moapa River Indian Reservation, but rather could provide jobs.” The Draft RMPA/EIS does not include requirements to hire tribal members during the construction of the facility, but this requirement could come out of the Section 106 consultation and further negotiations with the Applicant.

Significant traffic impacts, particularly at the exit to the Moapa Paiute Travel Plaza, are not anticipated. Section 3.16: Transportation of the Draft RMPA/EIS analyzes impacts to roadway operations from Project construction and operation. As discussed on page 3-162 of the Draft RMPA/EIS, during the peak construction period, the analysis area roadways and highways (including I-15) would continue to operate acceptably, with a volume lower than the LOS C capacity. Effects on roadway operations would not be adverse. Operation of the Project would generate substantially fewer trips than construction, and effects on traffic operations would be even less than during construction. The Project would not have an adverse effect on the operation of I-15 or Valley of Fire Road during Project construction or operation. MM TRA-1 in Appendix H requires that a Traffic and Transportation Plan be prepared that includes traffic control measures be used, consistent with the Manual of Uniform Traffic Control Devices, to minimize traffic conflicts and safety concerns. The Moapa Paiute Travel Plaza will likely see greatly increased patronage by the construction teams over the 2.5-year construction period, given it provides the only food, services, and provisions available for miles. This increase in business should have a positive impact on tribal revenues.

3.3 Responses to Substantive Comments

Table 3.3-1 provides response to each substantive comment submitted on the Draft RMPA/EIS.

Table 3.3-1 Responses to Substantive Comments

Comment Code	Date	Last Name, First Name	Affiliation	Comment Topic	Comment (Verbatim)	Response
A1-1	9/5/2019	Dunning, Connell	USEPA	Consultation, Coordination, and Public Involvement	We encourage the BLM and the Applicant to continue to meet with the EPA, U.S. Fish and Wildlife Service, U.S. National Park Service, and U.S. Army Corps of Engineers to optimize the project design such that it maximizes avoidance of critical areas and minimizes impacts to sensitive resources to the greatest extent feasible while meeting energy goals.	The USEPA, United States Army Corps of Engineers (USACE), and USFWS are cooperating agencies, as stated in Chapter 4: Consultations, Coordination, and Public Involvement, of the Draft RMPA/EIS. The NPS is a participating agency. Consultation and coordination with these agencies are ongoing due to the need for permits and authorizations from these agencies (Table 1.6-1 of the Draft RMPA/EIS provided a brief overview). The Applicant is required to obtain a permit from USACE for discharge of dredged and/or fill material into waters of the United States under Section 404 of the Clean Water Act (CWA). The Applicant, BLM, SHPO, OSTA, and federal OSNHT administrators (BLM and NPS) are developing an MOA and a HPTP in accordance with 36 CFR Section 800.6 that will address adverse effects on historic properties resulting from the Project. Section 7 consultation with the USFWS is ongoing to acquire a Biological Opinion and Take Authorization for impacts to Mojave desert tortoise.
A1-2	9/5/2019	Dunning, Connell	USEPA	Consultation, Coordination, and Public Involvement	In addition, the EPA recommends that the BLM continue to work with the Clark County Department of Air Quality to ensure that cumulative air quality impacts are reduced as much as possible and dust suppression is monitored.	Clark County is a cooperating agency, as was stated in Chapter 4: Consultations, Coordination, and Public Involvement, of the Draft RMPA/EIS. Coordination with Clark County is ongoing due to requirements for permits and approvals, including review and approval of a Surface Area Disturbance/Dust Mitigation Control Plan (as shown in Table 1.6-1 of the Draft RMPA/EIS).
A1-3	9/5/2019	Dunning, Connell	USEPA	Water Resources	Given the proposed Project's large footprint and potential hydrological impacts, the EPA also recommends additional considerations regarding flood management, maintaining naturally functioning hydrology, and avoiding impacts to downstream waters. Through the attached detailed comments, the EPA provides further description of these recommendations, and others, for the BLM to consider as the Final Environmental Impact Statement is being prepared.	Effects related to flooding and sedimentation on- and off-site were considered in Section 3.5: Water Resources of the Draft RMPA/EIS. Minimal recontouring would be required to develop the Project, due to the mostly flat terrain. Preliminary hydrologic modeling was conducted as part of the Conceptual Drainage Report for the Gemini Solar Project. Removal of vegetation was found to alter the hydrology, particularly as part of the Proposed Action. To ensure that stormwater runoff downstream does not exceed existing conditions, various drainage control structures would be installed as part of the Proposed Action. Maintenance of vegetation as part of the Hybrid Alternative and All Mowing Alternative would minimize effects to hydrology, eliminating the need for drainage control structures. Section 3.5: Water Resources of the Draft RMPA/EIS provided a detailed analysis.
A1-4	9/5/2019	Dunning, Connell	USEPA	Project Description and Design	According to the Draft Environmental Impact Statement, the project goal is to produce approximately 690 megawatts on 7,100 acres to meet energy demand in Nevada and/or California. As proposed, the Gemini Solar Project would require 10.3 acres of land per MW. Recent advances in technology and efficiency may allow the Applicant and the Bureau of Land Management to continue to refine the project design and reduce the overall acreage needed to achieve MW goals, as evidenced by other recently proposed solar projects, thereby reducing impacts. For example, the Desert Quartzite Solar Project was proposed as a 300 MW photovoltaic project in 2015 but advances in PV technology will now allow the generation of up to 450 MW on the same 3,770 acres footprint. In addition, the Edwards Air Force Base Solar Project ³ proposes to support a 750 MW project on 4,000 acres (5.3 acres per MW); Eagle Shadow Mountain ⁴ proposes a 300 MW project on 2,200 acres (7 .3 acres per MW); and the Crimson Solar Project proposes a 350 MW project on 2,500 acres (7 .1 acres per MW) or 2,200 acres (6.3 acres per MW). According to the	The recommendation is acknowledged and is in line with the mitigative requirements that were presented in the Draft RMPA/EIS. The BLM would review the final engineering design before a Notice to Proceed is issued, should the Project be approved. The design would need to demonstrate that the minimum area needed to safely operate a 690-MW project is being utilized and that resources are avoided. The Draft RMPA/EIS required implementation of several other mitigation measures to reduce effects on Nye milkvetch, threecorner milkvetch, and desert tortoise, as well as effects related to flooding. Refer to Master Response 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for more information

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					<p>DEIS, solar modules may include bifacial panels that absorb light from both sides of the panels - including energy reflected up from the ground surface - which, if used, would further increase the efficiency, resulting in less land required to construct a 690 MW project.</p> <p>Per mitigation measure MM WILD-1, all disturbance areas shall be refined and designed to the minimum size needed to safely and legally operate the facility and the Applicant will provide a revised Project footprint based on additional engineering design that will be reviewed and approved by the BLM prior to issuance of a Notice to Proceed for construction (Appendix H, pg. ix). The EPA encourages avoidance of the most sensitive resources as project design refinements lead to a reduced footprint. As the Applicant and the BLM work to refine the project footprint, please consider the following recommendations in the Final Environmental Impact Statement.</p> <p>Recommendations: Should the BLM and the Applicant determine that the Gemini Solar Project can meet the 690 MW goal while requiring fewer acres of disturbance, the EPA recommends that the FEIS identify additional design refinements that, when implemented, would reduce resource impacts. Consider design options that avoid areas with greatest densities of Nye milkvetch, threecorner milkvetch, and desert tortoise, as well as areas prone to flooding.</p>	<p>regarding the effects on Mojave desert tortoise, Nye milkvetch, and threecorner milkvetch, as well as the mitigation measures required. Maintenance of vegetation as part of the Hybrid Alternative and All Mowing Alternative, in addition to implementation of mitigation, would reduce effects on these species, but adverse effects would remain.</p> <p>Section 3.5: Water Resources analyzes effects related to flooding and identified mitigation measures (MM WR-1 and MM Geology and Soils [GS]-1) to minimize any adverse effects. Refer to Response to Comment A1-3 for information about the preliminary hydrologic modeling conducted for the Project and design features that relate to flooding.</p>
A1-5	9/5/2019	Dunning, Connell	USEPA	Project Description and Design	Consider the use of bifacial panels which would further increase the efficiency of the project and result in lower land requirements.	Bifacial panels may be the PV panel type installed as part of the Project and were considered in the Draft RMPA/EIS (refer to page 2-3 of the Draft RMPA/EIS). This is an option that the developer is exploring and would reduce the Project footprint.
A1-6	9/5/2019	Dunning, Connell	USEPA	Air Quality and Climate Change	Air quality impacts from Gemini Solar Project could be further exacerbated by the concurrent construction and operational emissions from nearby ongoing and reasonably foreseeable energy projects, as seen in Table 3.0-2 and Figure 3.0-2. However, the DEIS does not include an estimated quantification of air impacts from nearby projects, such as the Eagle Shadow Mountain Project, included in Table 3.0-2. Two additional large solar projects - Arrow Canyon Solar and Southern Bighorn Solar & Storage Center - were recently announced and are not included in Table 3.0-2 or Figure 3.0-2. The EPA recommends that the BLM identify additional measures in the FEIS to ensure direct, indirect, and cumulative air quality impacts are analyzed, disclosed, and mitigated.	<p>Section 3.9: Air Quality and Climate Change of the Draft RMPA/EIS analyzes the effects from generation of ambient concentrations of criteria pollutants during construction and operation compared to the NAAQS/SAAQS. As analyzed, exceedances of NAAQS/SAAQS could occur during construction outside the boundary of the construction work areas and directly adjacent to the gen-tie lines and adjacent to the proposed well, if constructed (refer Tables 3.9-1, 3.9-2, 3.9-5, and 3.9-7 in the Draft RMPA/EIS for modeling results). The identified mitigation measures would reduce maximum ambient concentrations of pollutants to the extent feasible, but exceedances would remain (refer to Section 3.9 for more information). No exceedance of NAAQS/SAAQS would occur during operation.</p> <p>The ambient concentration analysis accounted for background concentrations of pollutants over a 3-year averaging period (2015 to 2017), during which time several cumulative projects have been constructed or operated (e.g., cumulative projects 2, 3, 4, 5, and 6 identified in Table 3.0-2). The hydrographic basins within which the Project site is located are unclassified or in attainment for all air pollutants. As such, no cumulative impact has occurred even during the years cumulative projects were under construction. Ambient concentrations of pollutants diminish significantly with distance from the source. At a distance of 200 meters from the boundary of the maximum emission source locations (i.e., gen-tie lines and well), exceedances of NAAQS/SAAQS from construction activities would not occur (Ratte 2019). Due to the distance (551 meters) to the nearest cumulative project (21) proposed for construction, cumulative exceedances of NAAQS/SAAQS in Basin 218 and 216 would not occur. With mitigation, during operation, the Project is anticipated to reduce fugitive dust from the Project site compared to existing conditions. The Project and other renewable energy projects would have beneficial operational impacts</p>

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						<p>with respect to both criteria pollutant and GHG emissions because they would replace emissions associated with fossil fuel-fired power plants.</p> <p>The Southern Bighorn Solar Project and Storage Center was not proposed or had not been announced at the time of the Draft RMPA/EIS. This project has been added to the Table 3.0-2, Figure 3.0-2, and Figure 3.0-2 and considered in the analysis of the Final RMPA/EIS, where relevant. Incorporating the air pollutant emissions associated for each of the cumulative projects into a table would not add meaningful information to the analysis as the emissions would be localized and not necessarily cumulative with the Gemini Project. The addition of the Southern Bighorn Solar Project and Storage Center to the cumulative project list does not change the air quality and climate change cumulative analysis as written. The Arrow Canyon Solar project was previously named the Moapa Solar Energy Center (cumulative project 7). Additional information about the status has been added to Table 3.0-2.</p>
A1-7	9/5/2019	Dunning, Connell	USEPA	Air Quality and Climate Change	Recommendations: Revise Table 3.0-2 and Figure 3.0-2 to include Arrow Canyon Solar and Southern Bighorn Solar and Storage Center and provide an estimate of emissions from these, and any other neighboring projects that will be constructed during 2020-2023, to better understand the Gemini Solar Project contributions to cumulative air impacts.	Refer to Response to Comment A1-6 for information regarding the cumulative air quality analysis.
A1-8	9/5/2019	Dunning, Connell	USEPA	Air Quality and Climate Change	Coordinate with the Clark County Department of Air Quality to develop a phased construction schedule for Gemini, and other projects expected to undergo construction concurrently, to comply with local, state and federal air quality regulations.	Project construction is proposed to be phased over several years, as was noted on page 2-5 of the Draft RMPA/EIS. This phasing was incorporated into the air pollutant modeling (refer to supplemental information in the Air Quality and Climate Change Technical Report for more information). Refer to Response to Comment A1-2 for information about ongoing coordination with Clark County.
A1-9	9/5/2019	Dunning, Connell	USEPA	Air Quality and Climate Change	Identify additional mitigation measures that may be needed if the project would affect permitting of other projects.	Refer to the cumulative analysis in Section 3.9: Air Quality and Climate Change of the Draft RMPA/EIS and Response to Comment A1-6 for information regarding the cumulative air quality analysis. The Project would require a Surface Area Disturbance/Dust Mitigation Control Plan (as identified in Table 1.6-1 of the Draft RMPA/EIS), which would include the appropriate measures to minimize or reduce particulate matter and other criteria pollutant emissions during construction. Compliance with regulations and mitigation measures would ensure that the Project would not affect the permitting of other projects, which would be subject to their own analysis, modeling, and permitting at the time of construction.
A1-10	9/5/2019	Dunning, Connell	USEPA	Air Quality and Climate Change	Install real-time PM10 dust monitoring equipment, like that installed at solar facilities in southern California (e.g. Desert Sunlight), to monitor the construction and operational phases of the project. In the absence of monitoring equipment, identify what type of field monitoring would be conducted and clarify how the BLM would ensure that performance standards are met.	<p>The Project would require a Surface Area Disturbance/Dust Mitigation Control Plan under Clark County Department of Air Quality and Environmental Management. Section 94.7.5.1 of the Clark County Air Quality Regulations (AQRs) requires that:</p> <p>"Any CONSTRUCTION project having 50 acres or more of actively disturbed soil at any given time shall be required by the CONTROL OFFICER to have in place an individual designated as the Dust Control Monitor with full authority to ensure that dust CONTROL MEASURES are implemented, including inspections, record keeping, deployment of resources, and shutdown or modification of CONSTRUCTION ACTIVITIES as needed. This individual shall be listed on the</p> <p>Construction Site Dust Control Monitor form provided in Attachment 1 of the Construction Activities Dust Control Handbook." The Project would</p>

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						have more than 50 acres disturbed at any one time. The regulation of air quality impacts is under the jurisdiction of Clark County and would be implemented and enforced through a binding authorization from the County. The BLM would not have primary responsibility for compliance, but could report to the County any violations of the Project's Surface Area Disturbance/Dust Mitigation Control Plan. The need for real-time PM ₁₀ dust monitoring could be determined as needed by Clark County, and if required, would be installed. Refer also to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust regarding Clark County's jurisdiction over dust control.
A1-11	9/5/2019	Dunning, Connell	USEPA	Water Resources	The potential damage that could result from project-related disturbance to natural washes includes alterations to the hydrological functions that natural channels provide in arid ecosystems, adequate capacity for flood control, energy dissipation, and sediment movement, as well as impacts to valuable habitat for desert species. Clearing, grading, and compaction in preparation for construction of the solar arrays and access roads could affect drainages and ephemeral washes within the proposed Project area.	<p>Changes in capacity for flood control, energy dissipation, and sediment removal associated with natural washes is addressed in Section 3.5: Water Resources of the Draft RMPA/EIS. The topics were adequately addressed in the Draft RMPA/EIS, including through modeling, and prescription of mitigation to reduce adverse effects. The Proposed Action would require channel rerouting in order to minimize flood damage and to maintain the function of the desert washes such that off-site flooding and scour does not occur. Desert tortoise would be excluded from the solar facility under the Proposed Action. The solar facility must be designed to maintain the function of the drainages in order for the facility to safely operate under all alternatives. The Hybrid Alternative and All Mowing Alternative include the maintenance of vegetation, contours, and drainage patterns and functions, as stated on pages 3-40 through 3-41 of the Draft RMPA/EIS. Desert tortoise would be allowed to reoccupy the mowed areas under the action alternatives. The Draft RMPA/EIS presented the results of flow depth and rate modeling for the Proposed Action and the alternatives, to demonstrate minimal downstream, off-site changes in flow volumes, depths, and velocities. Maintaining vegetation under the mowing methods would also help to maintain baseline levels of sediment transport. Baseline levels of sediment transport are high and that transport is an important part of desert wash morphology and processes.</p> <p>Mitigation Measure WR-1 in Appendix H requires that after final engineering design is complete, flows are to be remodeled to ensure that off-site impacts would not be adverse and that the facility is designed to maintain existing flow patterns and ensure safety. The measure requires that jurisdictional drainages to be avoided in areas of traditional development be flagged or fenced at their top-of bank to ensure that when vegetation is removed during construction, no material is filled into these drainages.</p> <p>Mitigation Measure VG-3 requires compliance with a Section 404 of the CWA permit from USACE and minimizing road building and construction activities and vegetation clearing within ephemeral drainages.</p>
A1-12	9/5/2019	Dunning, Connell	USEPA	Vegetation and Jurisdictional Waters	<p>Based on information from the U.S. Army Corps of Engineers, we understand that up to 9,035 pilings (6 x 4 inches) could be placed into ephemeral drainages greater than 3-feet wide. In addition, tracker systems may include concrete posts 18 x 24 inches in diameter or driven posts 6 to 8 inches. The DEIS does not address the potential secondary effects of the placement of posts within waters. Additional information is needed to assess the direct and secondary adverse impacts to waters associated with: 1) the placement of aggregate base or concrete within waters for the construction of road crossings; 2) bank stabilization activities; 3) fencing; and 4) downed posts and solar panels during high velocity storm events.</p>	<p>Road crossings may require use of aggregate base. Each crossing would result in wash fill ranging from 0.01 to 0.1 acre (0.004 to 0.04 hectare). Total fill under the Hybrid Alternative is estimated at 1 acre (0.4 hectare) across the entire approximately 7,100 acres (2,873 hectares) site. Any aggregate material needed would be placed at grade for road crossings, allowing the wash to function the same as in pre-project conditions. Loss of material into the drainages would be reduced through the use of a concrete cut-off wall. The concrete cut-off wall would be flush to the road surface so</p>

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						<p>as not to interrupt flows or affect surface flows in the washes. The maximum acreage from cutoff wall construction is 0.01 acre (0.004 hectare) over the approximately 7,100 acres (2,873 hectares) facility for the Hybrid Alternative (the BLM Preferred Alternative). Impacts to the function of the drainages is expected to be minimal from the cut-off wall and road crossings.</p> <p>Concrete posts 18-inch by 24-inch (46-centimeter by 61-centimeter) in diameter would not be placed in ephemeral drainages; however, some pilings may be placed in drainages. Per the Section 404 Nationwide Permit (NWP) application, the pilings would be 6-inch by 4-inch (15-centimeter by 10-centimeter) and installed into waters of the United States only where it cannot be avoided, using pile drivers affixed to small tracked vehicles or utility trucks. The pilings would be direct buried (no concrete would be used during installation) and would be spaced approximately 21 feet (6.4 meters) apart. Phoenix Biological Consulting clarified by email to Lisa Gibson of the USACE on May 21, 2019, that no pilings would be installed in any ephemeral drainages less than 3 feet (1 meter) wide. Based on the information submitted, the USACE determined the installation of the pilings in waters of the United States does not constitute a discharge of fill material as defined in 33 CFR. 323, and therefore a permit is not required for this activity. The final number of pilings that would be placed in drainages would only be available at final engineering design. While the USACE found that pilings would not be considered jurisdictional "fill," suggesting that they would not have a substantial adverse effect on drainages, Mitigation Measure WR-1 in Appendix H requires that after final engineering design is complete, flows are remodeled to ensure that off-site impacts would not be adverse and that the facility is designed to maintain existing flow patterns and ensure safety. The modeling would be reviewed by the BLM and if any impacts could occur, modifications made to reduce those impacts. The Project would also be subject to Clark County RFCD review. As stated on page 3 of the Drainage Study, "The [Clark County RFCD] is responsible for the review and approval of all drainage plans and studies within their boundaries. Applicants must submit development proposals to the District for review if the development has regional flood control significance, meaning those facilities, land alterations, portions of the natural drainage system, and regulatory actions that impact the implementation of the Master Plan, or lie within Special Flood Hazard Areas." The analysis of the drainage impacts of the facility would be subject to another subsequent review with Clark County.</p> <p>Chain-link fencing, which allows the continued flow of water, would be installed. As such, fencing would not impede the flow of water. The largest drainages that could transport large boulders and debris would be avoided and are outside the facility fence lines. Where fences cross washes, breakaway fencing would be installed to allow larger flows to pass where the fence crosses a wash during major storm events. The breakaway fence is discussed in the Pre-Construction Notification (PCN) to the USACE. A discussion regarding breakaway fencing has also been added to Chapter 2: Proposed Action and Alternatives in the Final RMPA/EIS. The purpose of stabilization is to maintain existing flows and passage of water and, therefore, would not have adverse effects related to flooding, sedimentation, flow rates, and flow depths. Bank stabilization during</p>

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						<p>construction is discussed in the PCN and would include, but not be limited to, jute netting, fiber rolls, mulching, and/or hydro-seeding with a native seed mix along the banks.</p> <p>Edits have been made to Section 3.5: Water Resources from the Draft RMPA/EIS to the Final RMPA/EIS to clarify the minimal impacts from road crossings, pilings, and bank stabilization, and fencing within drainages. The Section 404 of the CWA NWP application and response from the USACE have been included as an appendix to the Final RMPA/EIS, as it provides additional information on these topics.</p> <p>The facility would be designed to reduce the risk of downed posts and solar panels during high velocity storms. Project development avoids large drainages (such as in the eastern edge of development area E).</p>
A1-13	9/5/2019	Dunning, Connell	USEPA	Water Resources	Characterize the functions of aquatic features, such as washes, on the proposed Project site. Discuss the direct and secondary impacts to waters from pilings, road crossings, stream bank stabilization and fencing. Evaluate the cumulative impact of the crossings and pilings on washes and their potential to alter flow and cause erosion and describe measures to maintain hydrology.	Section 3.5: Water Resources included a discussion of the washes on the Project site under the heading "Surface Water," starting on page 3-30 of the Draft RMPA/EIS. No other aquatic features are found on the Project site. As the discussion states, the washes drain stormwater from the Muddy Mountains through the valley to the Muddy River, approximately 13 miles north of the Project site. Refer to Response to Comment A1-12 for a discussion of why the impacts from road crossings, pilings, and fencing would be minimal. The total impact of the Hybrid Alternative on an estimated 1 acre (0.4 hectare) of jurisdictional washes out of a total of 107 acres (43.3 hectares) of jurisdictional washes within the Project site, the cumulative contribution on erosion and hydrology would be minimal and not adverse.
A1-14	9/5/2019	Dunning, Connell	USEPA	Vegetation and Jurisdictional Waters	Consider mitigation opportunities to compensate for the 0.78 acres impacted under the Clean Water Act Section 404. Possible mitigation opportunities could include enhancement projects in the watershed, such as cattle exclusion from drainages, rehabilitation of waters from damaging off-road vehicle use or removal of invasive plants. Opportunities to contribute funds to BLM restoration/enhancement projects may also exist.	The impacts of the Hybrid Alternative from road crossings of washes are estimated at 1 acre (0.4 hectare) out of approximately 107 acres (43.3 hectares) of jurisdictional washes on the 7,100-acre (2,873-hectare) Project site. Each wash would be minimally impacted. The values and function of the washes, which are primarily to convey stormwater and move sediment, would be minimally impacted. The USACE has determined that compensatory mitigation under the NWP for the Project is not required. Per the BLM Instruction Memorandum 2019-018, the BLM must not require its own compensatory mitigation. Impacts from the spread of invasive weeds is addressed in Section 3.6: Vegetation and Jurisdictional Waters of the Draft RMPA/EIS. MM VG-1 in Appendix H identifies numerous requirements for invasive weed treatment during construction and operation of the facility.
A1-15	9/5/2019	Dunning, Connell	USEPA	Water Resources	<p>Planning based on the 100-year flood zone may not be sufficient to both protect the project and avoid environmental impacts. As noted in the DEIS, a large flash flood in September 2014 resulted in the washout of 1-15 where the California Wash crosses under the freeway, approximately 6 miles north of the Project boundary. The DEIS concludes that such events are anticipated to be rare, with a 1 percent chance per year. The Federal Emergency Management Agency, in its guidance document "Further Advice on Executive Order 11988 - Floodplain Management" states that "in light of increasing flood damages occurring outside of the designated 100-year floodplain, it may be appropriate to consider using a higher flood standard for proposed activities which are funded, either directly or indirectly, by the federal government." FEMA also identifies Power Generating Stations as possible critical facilities and states that</p> <p>"According to Executive Order 11988, Floodplain Management, Federal agencies must conduct rigorous alternative site evaluations and meet higher design standards before funding, leasing, or building critical facilities in the 0.2-percent-annual-chance flood hazard area."</p>	<p>Refer to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust for more explanation on how flooding and drainage pattern changes were addressed in the Draft RMPA/EIS. The definition of a 500-year flood is for a 1 in 500 annual chance of the flood hazard. Over the 30-year life of the Project, there is a 6 percent chance that such a flood would occur and a 94 percent chance that it would not. The Draft RMPA/EIS is correct in noting that such events are expected to be rare.</p> <p>Executive Order (EO) 11988 is summarized in the Drainage Study, which was incorporated into the Draft RMPA/EIS by reference. FEMA's Guidelines on EO 11988 provide more context, as follows: "The minimum standard for Federal actions that are not federally funded projects is the 1-</p>

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						<p>percent-annual-chance flood elevation and corresponding horizontal floodplain for noncritical actions. Agencies should continue to use the 0.2-percent-annual-chance flood elevation and corresponding horizontal floodplain for critical actions... The [Federal Flood Risk Management Standard] identifies higher standards for critical actions for federally funded projects. For all other Federal actions that are not federally funded projects, agencies should consider using the 0.2-percent-annual-chance floodplain as a minimum standard if an action is determined to be a critical action. "</p> <p>The documentation cited by the commenter is "advice" intended to provide guidance on how to implement the provisions of EO 11988 but not a legal requirement. The development of the Gemini Solar Project would not be directly or indirectly "funded" by the federal government. As stated by the commenter, FEMA identifies power-generating stations as possible critical facilities. The Gemini Solar Project has not been specifically identified as a critical facility by FEMA. The requirement quoted by the commenter applies when the federal agency is funding, building, or leasing the facility. The BLM is leasing the land to the Applicant but would not own the facility and infrastructure. The intent of the advice appears to be to protect physical assets that represent a capital investment made by the federal government. The Gemini Solar Project infrastructure is entirely funded by private sources. There is no legal requirement to design to a 0.2-percent-annual-chance of flood in this case.</p> <p>MM WR-1 has been revised in the Final RMPA/EIS to indicate that the Applicant shall conduct modeling for the 500-year floodplain at the request of FEMA or Clark County. As stated on page 3 of the Drainage Study, "The [Clark County RFCD] is responsible for the review and approval of all drainage plans and studies within their boundaries. Applicants must submit development proposals to the District for review if the development has regional flood control significance, meaning those facilities, land alterations, portions of the natural drainage system, and regulatory actions that impact the implementation of the Master Plan, or lie within Special Flood Hazard Areas." Additional drainage studies will be required with final engineering. The Project washes will require remapping under FEMA and will be subject to Clark County RFCD review to ensure that impacts, particularly off-site flooding, do not occur.</p>
A1-16	9/5/2019	Dunning, Connell	USEPA	Water Resources	According to the DEIS, the West Tributary, California Wash, and East Washes 1, 2, and 3 would require remapping of post-construction flows under FEMA (pg. 3-34). Under post-development conditions, flows through the California Wash breakout zone in development areas B & C could experience flow depths up to 3.5 feet deep. It is estimated that the main branch of the California Wash has conveyance capacity equivalent to roughly a 10-year flood event (pg. 3-35); hence, all flows within the California Wash overtop the Valley of Fire Road. The DEIS indicates that a collector channel/berm and detention basin are included as part of the Proposed Action to capture runoff, in part to reduce any increase in peak runoff flow and flooding/overtopping at the Valley of Fire Road. It is unclear, however, where exactly overtopping occurs and if it occurs in multiple locations due to flooding from the West Tributary as well as the California Wash.	The commenter is correct that remapping of post-construction flows under FEMA is required. The commenter states that under "post-development" conditions, the flows through the breakout zone in development areas B and C would 3.5 feet (1.1 meters) in depth. This statement implies that the development would cause the flows to be 3.5 feet (1.1 meters) in depth; however, the flow depths in the breakout zone would be nearly the same for the pre- and post-development scenarios. The analysis on page 3-36 of the Draft RMPA/EIS detailed the impacts of the existing breakout flow and depths and how those impacts are minimized. The section stated that, "Within the solar development areas, the breakout overland flows in development area B could cause significant flood damage. The main branch of the California Wash could avulse (change flow path) as a result of sudden deposition and/or side bank erosion. No drainage facilities are proposed to be constructed on the California Wash due to the presence of sensitive environmental resources (the state-listed endangered threecorner

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						<p>milkvetch and archaeological sites) that could be adversely impacted by construction and/or increased flow in the wash and surrounding areas (i.e., the floodplain). To minimize the extent of possible damage to the solar facility from breakout overland flows, MM WR-1 requires solar panels and electrical equipment to be elevated above the 100-year flood depth (approximately 3 feet [0.9 meter]) in the affected development areas B and C, and foundations are designed to support against potential scour. Flood depths would not increase substantially in development areas D and E as drainage contours would be maintained or else rerouted with approval by the BLM and USACE during final engineering, per MM WR-1. MM GS-1 in Section 3.3: Geology, Soils, and Mineral Resources requires erosion control and bank stabilization devices to be installed in and around on-site and off-site washes (subject to appropriate permits). The measure also requires routine site inspections to identify and repair areas of erosion such as deep rills and gullies in the panel arrays and to maintain, change, or add additional erosion control features if needed (in accordance with required permits). Mitigation would minimize the adverse impacts of erosion and scour from increased site flows and flooding across the solar facility."</p> <p>The flows from the mainstem of the California Wash overtop Valley of Fire Road through the breakout area across 1 mile (1.6 kilometers). The Drainage Study, incorporated by reference into the Draft RMPA/EIS, includes numerous figures and a detailed discussion of the flow breakout from California Wash and where it overtops Valley of Fire Road. Page 20 of the Drainage Study states that "Valley of Fire Road is at-grade between development areas B and C and all flow conveyed within the California Wash overtops the road. The road profile dips where flow from the main branch crosses." Page 3-35 of the Draft RMPA/EIS also stated that "while development of the Project would increase the flow under the 100-year storm event, the flow would be distributed over 1 mile (1.6 kilometers) across the site boundary, following the contours on the surface that would be maintained during construction of the facility. That is, the overland flow path of breakout flow would be expected to remain the same or similar before and after construction. The maximum difference in flow depth across the breakout flow area at the northern Project site boundary is approximately 1 inch (2.5 centimeters) over that 1 mile (1.6 kilometers), which is negligible."</p> <p>The commenter may have misunderstood the purpose of the channel/berm and detention basin under the Proposed Action. The berm and detention basin are to protect only the West Tributary from increased volumes from overland flows over development area B into the tributary that eventually passes through an upstream box culvert under Valley of Fire Road.</p> <p>These channel and berm would not treat or hold water from overland flow from the mainstem California Wash. Refer to Page 19 of the Drainage Study that states, "The West Tributary crosses under Valley of Fire Road near the Moapa Paiute Travel Plaza through triple 12' x 4' (3.7 meters by 1.2 meters) reinforced concrete boxes (RCB). Development area A and portions of B drain to the West Tributary. Flow through the RCBs would be increased due to grading and removal of vegetation in development areas A and B. To offset increased runoff, a collector channel/berm and detention basin are proposed to capture runoff from development area B and meter outflow into the West Tributary. The purpose of the detention basin is to</p>

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						reduce any increase in the peak flow to the Valley of Fire road crossing of the West Tributary that may result due to development of the site. The channel/berm will need to be lined with an erosion-resistant material, such as soil cement or riprap. The detention basin and accompanying berm and channel were only modeled in the Proposed Action alternative as this alternative could increase runoff due to the use of traditional methods of development." Refer to Figure 3.2 of the Drainage Study to see the location of the berm and detention basin and the area of the West Tributary that it protects. The area of overtopping of Valley of Fire Road is clearly visible in this figure. This same figure was also available in the Draft RMPA/EIS, Appendix D, Figure 3.5-4.
A1-17	9/5/2019	Dunning, Connell	USEPA	Alternatives	For the Hybrid Alternative, the DEIS indicates that no berms or channels that could impact desert tortoise will be used; however, it does not indicate whether a detention basin will be constructed.	No detention basin is included in the Hybrid Alternative. Refer to Figure 2-22 of Appendix D which shows the Hybrid Alternative and the description of the Hybrid Alternative on page 2-9 of the Draft RMPA/EIS does not include a detention basin. Only the Proposed Action includes drainage control structures including a detention basin (page 2-7 of the Draft RMPA/EIS).
A1-18	9/5/2019	Dunning, Connell	USEPA	Water Resources	Include a project site map that indicates the drainages that will be avoided and include wide buffers for larger drainages so the channels may adjust to the new hydraulic conditions without the need for major human-made structures. Clarify whether a collector channel/berm and stormwater detention basin are components of the Hybrid Alternative, as proposed in the DEIS or the Conceptual Drainage Report.	<p>A site map showing jurisdictional drainages was included in the Draft RMPA/EIS as Figure 3.60-20 in Appendix D. MM WR-1 in Appendix H requires that jurisdictional drainages be avoided. Drainages in the traditional development areas must be flagged during construction for avoidance from heavy equipment and vegetation removal. Mowed areas would not include vegetation removal and the use of heavy equipment in a way that can disrupt soils. The BLM must review the final engineering design to verify that the jurisdictional drainages are avoided, prior to issuance of an NTP, should the Project be approved. The map and the mitigation provide the information requested by the commenter.</p> <p>Washes may move, but a large avoidance buffer is not practical as the direction of movement is unknown. MM GS-1 in Appendix H requires measures to minimize erosion; identify and repair areas of erosion, rills, and gullies; and to use stabilization as needed and permitted.</p> <p>As described in Response to Comment A1-17, the Hybrid Alternative does not include establishment of any berms, channels, or detention basins.</p>
A1-19	9/5/2019	Dunning, Connell	USEPA	Water Resources	Discuss the anticipated extent and depth of overland flows through the development areas given a 500-year flood event, as compared to a 100-year event. Compare the depth of overland flow in the California Wash breakout zone in areas B & C for 100-year and 500-year events. Include figures illustrating the location(s) where flooding/overtopping would occur and discuss the depth of flooding on the Valley of Fire Road during a 100-year event, pre-and post-development, and consider whether design modifications or road improvements are needed.	<p>Refer to Response to Comment A1-15. Modeling and design to a 500-year flood event is not legally required. MM WR-1 has been revised in the Final RMPA/EIS to indicate that the Applicant shall conduct modeling for the 500-year floodplain at the request of FEMA or Clark County.</p> <p>Refer to Response to Comment A1-16. The Draft RMPA/EIS included a discussion of and figures showing where flooding/overtopping would occur and the depth of flooding on Valley of Fire Road during a 100-year event during pre- and post- Project conditions. The change in depth of 1 inch (2.5 centimeters) over Valley of Fire Road during a 100-year storm event would not merit design modifications or road improvements.</p>
A1-20	9/5/2019	Dunning, Connell	USEPA	Water Resources	Confirm in the FEIS that all substations, switchyards, and buildings areas are outside of the 500-year floodplain, consistent with FEMA guidance ¹⁰ and describe how essential equipment would be protected from flooding. Identify if battery systems and power conversion stations (inverters) will be elevated in areas with overland flows and if solar panels can be elevated above the 100-year flood depth - including depths up to 3.5 feet in the California Wash breakout zone - or if panels will be limited to 2-2.5 feet above the ground. Discuss if underground cable/equipment located in trenches in the solar arrays would be	Refer to Response to Comment A1-15. Designing the facilities, including substations and PCSs, based on a 500-year flood event is not legally required for this Project. Refer to Response to Comment A1-16 for a discussion of how the Draft RMPA/EIS addressed impacts to and mitigation for essential equipment and the requirements of MM WR-1 in Appendix H. This measure applies to "electrical equipment" which includes

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					impacted if there were substantial flooding due to overland flows. Consider avoiding placement of structures in the California Wash breakout zone in areas B & C.	substations/switchyards, battery systems, and PCSs. It explicitly requires solar panels to be raised above the 100-year flood depths. Underground facilities, due to the fact that they are underground, would not be impacted by overland flows. They would be at a great enough depth to not be impacted by erosion and installed within protective conduits. Structures would need to be engineered to withstand the 100-year flood event if placed in the California Wash breakout zones in development areas B and C, per MM WR-1.
A1-21	9/5/2019	Dunning, Connell	USEPA	Water Resources	Discuss the need for remapping post-construction flows under FEMA (West Tributary, California Wash, and East Washes 1, 2, and 3).	This concern was addressed in the Draft RMPA/EIS, on page 3-34, where it stated, "The West Tributary, California Wash, and East Washes 1 through 3 would require remapping under FEMA of post-construction flows." Given the page limitations imposed on EISs under SO 3355, this discussion as presented in the Draft RMPA/EIS is adequate. Additional information is included in the Drainage Study, which was incorporated into the Draft RMPA/EIS by reference. Refer to page 2 of the Drainage Study, under the section entitled, "National Flood Insurance Program and National Flood Insurance Act of 1968 and Executive Order 11988, "Floodplain Management," May 24, 1977.
A1-22	9/5/2019	Dunning, Connell	USEPA	Water Resources	As noted in the DEIS, the Muddy River is considered impaired, and is on Nevada's 303(d) list for exceeding state water quality standards (pg. 3-30). There may be indirect impacts to downstream structures, including Moapa Reservation infrastructure, and to tributaries downstream of the site leading to the Muddy River, as well as indirect impacts to the Muddy River itself. Indirect effects could include changes in sediment transport to the Muddy River and increases in volume/velocity of stormwater.	Indirect impacts on the Muddy River and other infrastructure were addressed on page 3-37 of the Draft RMPA/EIS where it states, "During the largest storm events, the California Wash transports an enormous amount of sediment. Sediment transport and deposition is part of the natural geomorphic processes in the desert. No land uses (for example, structures, agricultural uses, or mining) that could be impacted by sediment deposition are located within 13 miles (21 kilometers) of the Project's northern boundary. The contribution of sediment would be minor compared with the sediment transported along the remaining 13 miles (21 kilometers) of the California Wash to the point where it converges with the Muddy River. Impacts of increased sediment transport are not anticipated to be adverse or to have substantially different impacts on water quality in the Muddy River than under existing conditions." Volume and velocity changes were modeled in the Drainage Study and would be minimal at the downstream boundary of the facility, and even further reduced 13 miles (21 kilometers) north at the Muddy River.
A1-23	9/5/2019	Dunning, Connell	USEPA	Water Resources	Based on updated drainage, sedimentation and stormwater plans, identify indirect impacts to the Muddy River or its tributaries downstream of the site leading to the Muddy River and discuss the monitoring protocols and the water quality thresholds to be used to ensure the Muddy River is not further impaired due to the proposed Project. Confirm that the construction and operation of the proposed Project will not have downstream impacts on residents or structures, including the Moapa Paiute Travel Plaza and the Moapa River Indian Reservation.	Refer to Response to Comment A1-22. Indirect impacts to the Muddy River from sedimentation are not anticipated. Monitoring is not required at the Muddy River given that the Project should have no adverse effects on the Muddy River. MM WR-1 in Appendix H describes the specifications for the required Stormwater Quality Monitoring Program to ensure that stormwater quality is not being adversely impacted at the Project site. The Project would have some impacts on downstream water quality and runoff flows, but no residents or structures would be impacted (page 3-37 of the Draft RMPA/EIS) because the effect would be minimal and none are located within the downstream washes including the Moapa Paiute Travel Plaza and Moapa River Indian Reservation.
A1-24	9/5/2019	Dunning, Connell	USEPA	Water Resources	The security perimeter fence in mowed areas would be raised approximately 8 inches, allowing movement of desert tortoises. This opening will also allow overland hydrologic flows to pass through the site more easily, which is critical in the project setting where storms can be sudden and severe, resulting in flash flooding. It is not clear, however, how	Refer to Response to Comment A1-12. Breakaway fencing would be used in areas where the fence crosses washes, as was stated in the PCN. Edits have been made to the Final RMPA/EIS and the PCN and correspondence from the USACE has been included as an appendix to the Final RMPA/EIS.

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					fencing could impede or redirect flows in other areas where the bottom of the fence will not be lifted.	
A1-25	9/5/2019	Dunning, Connell	USEPA	Water Resources	Include a description of the potential effects of fencing on drainage systems and consider incorporating best practices from other projects assessing fencing impacts on hydrology and infrastructure. Identify how fencing proposed for this project would maintain functioning hydrologic flows and not impede or redirect flood flows, especially around traditional areas of development that are prone to overland flow - including the California Wash breakout zone in development areas B & C. Discuss the use of break-away fencing in strategic locations to allow for adequate flows during storm events.	Refer to Response to Comment A1-12. Chain-link fencing would be used along with breakaway fencing in areas where the fencing crosses washes, as was stated in the PCN. Impacts to stormwater flow would be minimized. Edits have been made to the Final RMPA/EIS and the PCN and correspondence from the USACE has been included as an appendix to the Final RMPA/EIS.
A1-26	9/5/2019	Dunning, Connell	USEPA	Consultation, Coordination, and Public Involvement	Provide an update on the consultation process with the USFWS and NDOW. Summarize and append any relevant documents associated with the ESA Section 7 consultation process, including the Biological Assessment, Biological Opinion, Desert Tortoise Translocation Plan, and Desert Tortoise Long-Term Monitoring Plan.	The consultation with USFWS under Section 7 of the ESA is underway with a Biological Opinion anticipated the first week of November. The Final RMPA/EIS has been updated with the Biological Assessment and Desert Tortoise Translocation Plan in appendices. The Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion.
A1-27	9/5/2019	Dunning, Connell	USEPA	Threatened, Endangered, and Candidate Species	Discuss additional mitigation and monitoring measures that result from consultation to protect sensitive biological resources.	The Biological Opinion will include any additional legally binding measures to protect sensitive biological resources. Other measures are included in the Biological Assessment. The Biological Assessment and Desert Tortoise Translocation Plan have been included in appendices to the Final RMPA/EIS.
A1-28	9/5/2019	Dunning, Connell	USEPA	Threatened, Endangered, and Candidate Species	Include specific timeframes and metrics of success to evaluate successful translocation of tortoises.	Refer to the Desert Tortoise Translocation Plan for the details of translocation, including the proposed timeline for clearance surveys and translocation. The plan has been included as an appendix to the Final RMPA/EIS. The translocated and reintroduced tortoises would be monitored long-term for the success through the Long-Term Monitoring Plan, required as part of the Section 7 consultation process. The Long-Term Monitoring Plan will require tracking of tortoises with transmitters attached and tortoise health assessments.
A1-29	9/5/2019	Dunning, Connell	USEPA	Threatened, Endangered, and Candidate Species	Describe how the area surrounding the proposed Project - which will serve as new habitat for the translocated tortoises - will serve as suitable habitat into the foreseeable future.	The area surrounding the Project site would serve as desert tortoise habitat into the future as no Project-related activities would occur outside of the Project facility boundary without prior BLM authorization and appropriate consultation with the USFWS. The surrounding habitat also currently supports desert tortoises and its suitable habitat. With proper implementation of the Integrated Weed Management Plan, habitat quality in the area surrounding the Project facility is not expected to change after Project construction is complete.
A1-30	9/5/2019	Dunning, Connell	USEPA	Vegetation and Jurisdictional Waters	Include additional figures that illustrate where disk and roll versus drive and crush will be used in traditional development areas in the FEIS.	An additional figure (Figure 3.6-21) has been added to Appendix D in the Final RMPA/EIS to show the drive and crush areas.
A1-31	9/5/2019	Dunning, Connell	USEPA	NEPA and Decision Process	Include the Site Restoration Plan and Site Decommissioning Plan in the FEIS or post the documents on the BLM's ePlanning website.	The Site Restoration Plan and the Decommissioning and Site Reclamation Plan have been included for posting on ePlanning website with the Final RMPA/EIS.
A1-32	9/5/2019	Dunning, Connell	USEPA	Vegetation and Jurisdictional Waters	Clarify whether MM VG-2 applies to all traditional development areas in the Project site - including areas A and B - or just traditional development areas in C, D, and E.	The areas of applicability for MM VG-2 are stated as in "modeled habitat for threecorner milkvetch" in Appendix H. This reference has been edited in the Final RMPA/EIS Appendix H to indicate that the measure applies to "All Project areas." Where specific aspects of the measure only apply to threecorner milkvetch habitat, only development areas D and E would be included. There is no modeled threecorner milkvetch habitat in development areas A, B, or C, as shown in Figure 3.6-18 of Appendix D and referenced in MM VG-2 for the Hybrid Alternative and All Mowing

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						Alternative. Areas where individuals were found in 2018 surveys in the original boundary of development area C were excluded as part of the Hybrid Alternative and All Mowing Alternative. Development area C is smaller in the action alternatives.
A1-33	9/5/2019	Dunning, Connell	USEPA	Vegetation and Jurisdictional Waters	Analyze and disclose potential impacts to Nye milkvetch in development area A (Table ES-2). Consider identifying additional "no-development zones" and avoiding construction/disturbance in areas that contain the greatest densities of threecorner milkvetch and Nye milkvetch.	<p>Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities, which provides additional information on how impacts to threecorner milkvetch and Nye milkvetch were addressed in the Draft RMPA/EIS.</p> <p>Avoidance of Nye milkvetch would require removal of most of development area A. In order to obtain the acreage needed, other acreages would need to be utilized that could have greater impacts to other species, such as desert tortoise if development areas G or B2 are utilized. Impacts were identified as adverse in the Draft RMPA/EIS.</p> <p>The Hybrid Alternative and All Mowing Alternative were designed to avoid the highest density of identified threecorner milkvetch individuals and populations, particularly in the eastern portion of development area C and all of development area F, as explained under Master Response 1: Alternatives. A total of 1,102 individual plants were avoided in development area F and 139 were avoided in development area C, noting that individual plant numbers will change each year since it is an annual plant. Similar to Nye milkvetch, avoidance of suitable threecorner milkvetch habitat could have greater impacts on desert tortoise habitat.</p>
A1-34	9/5/2019	Dunning, Connell	USEPA	Vegetation and Jurisdictional Waters	MM VG-I states that if the Proposed Action is selected, measures to protect or store biocrust will be identified in the Site Restoration Plan; however, it is not clear how protecting or storing biocrust will occur with the Hybrid Alternative.	<p>Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to biocrust and how impacts would be reduced and protected. To ensure that MM VG-1 in Appendix H is consistent with the Site Restoration Plan it has been revised in the Final RMPA/EIS to indicate that significant strands of biocrust will be salvaged by hand or using very small equipment and stored until it can be restored from the areas where it was removed. The Site Restoration Plan is included with the Final RMPA/EIS. The Site Restoration Plan is based on the Hybrid Alternative, which was identified as the BLM's Preferred Alternative in the Draft RMPA/EIS. The Site Restoration Plan states, "The areas identified during the botanical resources survey with the most biocrust and desert pavement are either excluded from the Hybrid Alternative (development area F) or have large portions designated for mowing (development areas B and D)... Impacts to native substrates, including biocrust and desert pavement, will be reduced in the drive and crush, and mowed areas. Biocrusts and desert pavement will be inventoried during the Clearance Surveys throughout the Project Area; however, biocrusts and desert pavement in permanent impact areas subject to D-2 and D-3 disturbance levels will not be salvaged or restored."</p> <p>The Draft RMPA/EIS provided a detailed analysis of biocrust impacts from the Hybrid Alternative. The analysis identifies some loss of biocrust in mowed areas and up to 117 acres (47 hectares) of lost biocrust in traditional development areas and recognizes that the impact may be adverse.</p>
A1-35	9/5/2019	Dunning, Connell	USEPA	Vegetation and Jurisdictional Waters	Identify installation techniques that avoid disturbance of existing biocrust and desert pavement and provide measures to protect or store biocrust that are applicable to all alternatives.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities . The analysis of impacts to biocrust was identified for both the All Mowing and the Hybrid Alternative in the Draft RMPA/EIS on pages 3-59 and 3-64, respectively. The analysis

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						is included in the Site Restoration Plan, included as an appendix to the Final RMPA/EIS.
A1-36	9/5/2019	Dunning, Connell	USEPA	Project Description	Clarify the extent that the pH of the soils may impact metal pilings in the Gemini Project area.	The Preliminary Geotechnical Evaluation, incorporated by reference into the Draft RMPA/EIS, addresses soil corrosivity. Soils in most of development area A (in soil type SP) and the top quarter of development area B (soil type BHC), have high and moderate to high corrosivity, respectively. See Section 7 on page 8 of the Preliminary Geotechnical Evaluation. Corrosivity and considerations for design have been added to the revised and updated POD included with the Final RMPA/EIS. Recommendations for appropriate protection would come out of a detailed geotechnical investigation.
A1-37	9/5/2019	Dunning, Connell	USEPA	Project Description	Discuss what can be done to better protect the metal pilings, if necessary.	See Response to Comment A1-36 for information on protection of metal pilings.
A1-38	9/5/2019	Dunning, Connell	USEPA	Old Spanish National Historic Trail	The DEIS states that the BLM and the National Park Service are co-administrators of the Old Spanish National Historic Trail, which transects the valley where the proposed Gemini project is located. We encourage the BLM to continue to work with the NPS to demonstrate how the proposed Project is consistent with the National Trails Systems Act of 1968, including the need to consider the effects of proposed actions on the OSNHT (pg. 3-137). We understand that construction and operation of the proposed Project would result in modern built features across the High Potential Route Segment of the OSNHT that would substantially interfere with the natural and cultural environment of the valley.	The BLM has entered into an MOA with the SHPO to which the OSNHT Co-Administrators are a party. The BLM is continuing to work with the OSNHT Co-Administrators (NPS and BLM). Master Response 5: Old Spanish National Historic Trail provides additional information on the OSNHT, including the Project's analysis of consistency with regulatory policy
A1-39	9/5/2019	Dunning, Connell	USEPA	Old Spanish National Historic Trail	We note that while voluntary compensatory mitigation (MM NHT-1) in the amount of \$25,000 will support the goals of the Old Spanish Trail Association, we recommend that the FEIS identify mitigation measures to reduce adverse effects to the setting along the trail. We note that the DEIS concludes that, for the Proposed Action, the site is not expected to ever fully recover to pre-disturbance conditions."	Refer to Master Response 5: Old Spanish National Historic Trail for a discussion of the additional mitigation included in the Final RMPA/EIS and the increase in the voluntary compensatory mitigation from the applicant to \$250,000 to support the Boy Scout and other projects on the OSNHT. The comment is correct that the Proposed Action could result in scarification of the land that could take decades to centuries to recover. The mowing alternatives greater reduce this long-term impact to the trail, as stated on page 3-146 of the Draft RMPA/EIS.
A1-40	9/5/2019	Dunning, Connell	USEPA	Old Spanish National Historic Trail	Clarify how the proposed project is consistent with National Trails Systems Act of 1968.	Refer to Master Response 5: Old Spanish National Historic Trail for information on consistency with National Trails Systems Act of 1968.
A1-41	9/5/2019	Dunning, Connell	USEPA	Old Spanish National Historic Trail	Identify design modifications or mitigation measures, if any, that can be implemented to avoid or minimize impacts to the OSNHT. Consider the possible purchase of other segments of the OSNHT, with similar values, as a potential mitigation measure.	Because the OSNHT in the Project area is considered a corridor that spans the entire valley, it is impossible to minimize or avoid effects to the setting of the OSNHT and to develop the Project, as explained in Master Response 5: Old Spanish National Historic Trail . Mowing preserves several of the individual values important to the trail, including the natural resources such as the vegetation, hydrology, and wildlife, but cannot minimize the impacts to the visual setting. Refer to Master Response 5: Old Spanish National Historic Trail for a discussion of additional mitigation added to the Final RMPA/EIS. Per the BLM Instruction Memorandum 2019-018, the BLM must not require compensatory mitigation.
A1-42	9/5/2019	Dunning, Connell	USEPA	Land Use	Describe the status of the Section 368 energy corridor review. Include updated information and recommendations regarding Section 368 COC (39-113), including what mitigation measures are proposed to avoid or minimize conflicts.	The Section 368 corridor (Energy Corridor of Concern [COC] 39-119) is described in Section 3.1: Land Use of the Draft RMPA/EIS and the Land Use and Corridor Report that was incorporated into the Draft RMPA/EIS by reference. The portion of COC 39-113 in the Project area is currently undeveloped and no utilities are currently proposed in this portion of the corridor. The report also identifies that "Installing solar panels within the

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						<p>corridor could create an incompatible use preventing future development of energy infrastructure by occupying the space that would be needed for facilities and access." Several measures are identified to address potential conflicts, including:</p> <ul style="list-style-type: none"> - In coordination with the BLM, future transmission capacity in the corridor should be reviewed to determine whether the corridor should be excluded from solar development or whether the capacity of the designated corridor can be reduced. - In coordination with the BLM, options to partially relocate the corridor should be reviewed to retain the current planned capacity or to relocate the solar project outside the designated corridor. <p>Since issuance of the Draft RMPA/EIS, the BLM has reviewed the corridor and determined that any development within it would be a conflict and would be incompatible with the designation as an energy corridor. The determination as to whether or not the Project can develop within this corridor would be presented in the ROD. The Final RMPA/EIS is being updated with this information.</p>
A1-43	9/5/2019	Dunning, Connell	USEPA	Land Use	Identify what measures can be taken to both allow installation of solar panels within the Section 368 energy corridor and preserve future development of energy infrastructure within the corridor.	See Response to Comment A1-42. The Land Use and Corridor Report identifies that the options include reducing the capacity of the corridor, which would allow for some development within this corridor or to relocate the corridor.
A1-44	9/5/2019	Dunning, Connell	USEPA	Project Description	Clarify the total number of acres required for the battery systems and inverters.	The acreages of the equipment areas are presented in Table 1-2 of the POD and in Table 2 of the Biological Assessment (BA) (included as an appendix to this Final RMPA/EIS). The acreage for inverters, battery storage containers, and transformers is 14.7 acres (5.9 hectares) in total across the Project site.
A1-45	9/5/2019	Dunning, Connell	USEPA	Water Resources	Include an analysis of the energy needs and associated impacts to air emissions (e.g. for HVAC) and site hydrology for the battery systems.	As is stated in the POD, incorporated by reference into the Draft RMPA/EIS, "the climate control system [for the battery system] would be powered by the solar panels." As such, the battery system would have no air emissions. No air emissions analysis is needed. Each individual component of the battery system is relatively small (40 feet [12.2 meters] long by 9.5 feet [3 meters] wide) and would not individually have a noticeable effect on hydrology. The Drainage Study and Section 3.5: Water Resources of the Draft RMPA/EIS addressed impacts on hydrology associated with the entire Project, including the battery system. MM WR-1 from Appendix H requires that "during the final engineering design, the site hydrology shall be remodeled, considering the final configuration of solar development areas, solar features, and areas constructed via mowing versus traditional methods of development (under the Hybrid Alternative or All Mowing Alternative). Based on the outcome of the remodeling, solar panels and electrical equipment shall be elevated above the 100-year flood depth in the affected areas of development areas B and C, and foundations shall be designed to withstand scour." Mitigation would minimize adverse effects on hydrology associated with the Project, including the battery system.
A2-1	5/20/2019	Hardenbrook, Brad	NDOW	Wildlife, Migratory Birds, and Special Status Species	Because this is a summary report of alternatives to be included in the Draft RMPA/EIS, understandably not all measures for avoiding or minimizing impacts are expected to be detailed. One example is description on page 1-5 for a lattice tower for meteorological instrumentation. Lattice work is not recommended as it provides perching and nesting subsidies for common ravens and other potential avian	The comment is acknowledged that using lattice towers for the gen-tie lines can have greater impacts to desert tortoise as they can provide perching and nesting sites for ravens and other predators. The Draft RMPA/EIS identifies the use of lattice towers as an option, as lattice towers can reduce other

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					predators to the desert tortoise. In keeping with reducing transmission structure impacts to biological resources, all tower structures should be non-guyed monopole design.	adverse effects, such as visual impacts. The Draft RMPA/EIS acknowledges, "increased risks if steel lattice towers are used for the gen-tie lines where ravens could perch" (page 3-87 of the Draft RMPA/EIS). The Draft RMPA/EIS appropriately identifies the impacts. In the ROD, the BLM can specify the appropriate elements of the Project for approval upon weighing the impacts. In addition, the Applicant will be required to follow the Raven Management Plan, which outlines raven avoidance and minimization measures taken to discourage raven presence, while in complying with the MBTA. The Raven Management Plan also provides guidance for determining measures intended to deter raven predation on special status species, especially hatchling and juvenile desert tortoises.
A3-1	9/6/2019	Mahr, Aaron	NPS	Old Spanish National Historic Trail	Setting - Solar panels and associated infrastructure may draw focus away from the broader landscape and towards the 7,000-acre reflective array on the landscape.	The integrity of the setting has been analyzed on page 3-142 of the Draft RMPA/EIS.
A3-2	9/6/2019	Mahr, Aaron	NPS	Old Spanish National Historic Trail	Feeling - Solar panels and associated infrastructure will change the current undeveloped and isolated feeling of the site.	The integrity of the feeling has been analyzed in Section 3.14: Old Spanish National Historic Trail of the Draft RMPA/EIS.
A3-3	9/6/2019	Mahr, Aaron	NPS	Old Spanish National Historic Trail	Vicarious Experience - The current setting and feeling of the site is largely identical to the setting and feeling that would have been experienced by travelers along the Trail, which allows visitors to approximate an authentic Trail experience. The proposed solar panels and associated infrastructure will alter the setting and feeling of the site.	The integrity of setting has been analyzed on page 3-142 of the Draft RMPA/EIS. The current setting and feeling of the site are not identical to the setting and feeling experienced by travelers. As stated on page 3-143 of the Draft RMPA/EIS, the historic setting of the OSNHT is already slightly diminished by modern intrusions, including the Moapa Solar Project (built in 2014), the Moapa Paiute Travel Plaza, roads, I-15, and existing transmission lines.
A3-4	9/6/2019	Mahr, Aaron	NPS	Old Spanish National Historic Trail	Access and Recreation potential - The proposed solar panels and associated infrastructure will restrict movement within the trail corridor, by creating one or two concentrated paths of travel that would not be reminiscent of the authentic Trail experience.	The Draft RMPA/EIS states on page 3-145 that "recreational access within the OSNHT corridor in the Project area would be substantially restricted by Project construction and O&M... access to portions of Old Spanish Trail Road would be permanently severed, specifically through development areas D and E, resulting in adverse impacts on recreationalists utilizing Old Spanish Trail Road for access and travel opportunities."
A3-5	9/6/2019	Mahr, Aaron	NPS	Old Spanish National Historic Trail	Interpretive Potential - The California Crossing HP Segment is notable as a “jornada del muerte,” or a “day’s journey of death,” due to the lack of water and the desolate nature of the landscape. Changing the nature of the landscape (via high impacts to the setting and feeling as discussed above) may significantly reduce the interpretive potential of the site.	The comment is acknowledged and is consistent with the analysis presented in the Draft RMPA/EIS. Refer to Master Response 5: Old Spanish National Historic Trail for a discussion of additional mitigation that has been added to the Final RMPA/EIS to capture the existing conditions in photo and video documentation, and to document the history of this crossing.
A3-6	9/6/2019	Mahr, Aaron	NPS	Old Spanish National Historic Trail	Historic Remnant - Currently the historic remnant of the Old Spanish Trail located within the Old Spanish National Historic Trail corridor is undeveloped, but accessible by the public. As currently proposed, the solar panels and associated infrastructure will adversely affect this historic remnant of the Trail.	The historic remnant of the Old Spanish Trail is not undeveloped. This remnant is the 5,843-foot (1,781-meter) segment within the Project area identified by the study performed under the ARRA. This segment has been converted into a "well-used modern two-track road", as stated on page 3-124 of the Draft RMPA/EIS. This track is accessible to the public and access would be cut off during construction and operation of the facility. The road can be avoided during engineering such that it could be restored to public use after decommissioning of the facility, which may be determined to be a required measure to reduce effects. Refer to Master Response 5: Old Spanish National Historic Trail for information on the remnant and ongoing collaboration with SHPO and the Co-Administrators. The remnant is significant for its setting as it is ground features have been

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						altered (e.g., no wagon wheel ruts are evident, no artifacts are found). The impacts to the setting cannot be avoided.
A3-7	9/6/2019	Mahr, Aaron	NPS	Old Spanish National Historic Trail	We were unable to identify any on-site mitigation measures that would fully and adequately mitigate these adverse effects, although we did propose several measures that would lessen impact to the NHT	The OSNHT in the Project area is considered a corridor that appears to span most of the valley in which the solar facility is located. The solar facility, inherently, results in considerable visual disturbance. On-site mitigation to fully minimize or avoid impacts is not feasible. As stated on pages 3-130 to 3-132 of the Draft RMPA/EIS, the mowing alternatives preserve some of the components of the Old Spanish Trail that are important, including vegetation, contours, soils, and wildlife. While this method of construction reduces some impacts, it does not diminish the adverse impacts substantially during project operation. The impact has been identified as a substantial interference with the purpose, nature, and uses of the OSNHT during the operation of the facility. After site reclamation, these impacts would diminish. Adverse effects would remain following reclamation for the Proposed Action and Hybrid Alternative but would be eliminated for the All Mowing Alternative. Refer to Master Response 5: Old Spanish National Historic Trail for additional discussion of the impacts of the Project on the OSNHT and the proposed mitigation.
A3-8	9/6/2019	Mahr, Aaron	NPS	Old Spanish National Historic Trail	Likewise we were unable to identify a comparable segment(s) for possible acquisition as commensurate mitigation, although we did propose several “second best” options.	Per the BLM Instruction Memorandum 2019-018, the BLM must not require compensatory mitigation. While the BLM will consider voluntary proposals by applicants for compensatory mitigation, the BLM cannot require an applicant to implement off-site mitigation. The Applicant is coordinating with the OSTA to determine additional contributions that would support programs related to the preservation of the history of the trail and the further education of the public on the trail, its history, and its importance in the region.
A3-9	9/6/2019	Mahr, Aaron	NPS	Old Spanish National Historic Trail	On June 6, 2019 we provided this information to the BLM and on August 21, 2019 the BLM responded to our suggested mitigation measures. In all but two cases the BLM indicated that our proposed mitigation measures for Action alternatives were outside the scope of the project or could not be analyzed as they would result in additional impact to other resources.	Refer to Master Response 5: Old Spanish National Historic Trail for a discussion of the expanded voluntary applicant-proposed compensatory mitigation.
A3-10	9/6/2019	Mahr, Aaron	NPS	Old Spanish National Historic Trail	As such, we recommend the BLM provide further clarification as to what mitigation measures will adequately offset the impact of this undertaking on the Old Spanish NHT.	Refer to Master Response 5: Old Spanish National Historic Trail for a discussion of the expanded voluntary applicant-proposed compensatory mitigation and other mitigation. Voluntary compensatory mitigation from the Applicant has been increased to \$250,000, which will allow for a substantial increase in educational and preservation opportunities for the OSNHT in the region, including providing the support needed for Boy Scout projects on the OSNHT that otherwise would not be implemented. This support would have a positive impact on documenting and thus, preserving, the history of the Old Spanish Trail in this region.
A4-1	9/6/2019	Maples, Matt	Nevada Department of Wildlife	Threatened, Endangered, and Candidate Species	Baseline knowledge of the distribution and relative abundance of desert tortoise within the project area is fundamental to assess the potential impacts and develop avoidance and minimization measures for the project. The current estimate of desert tortoise within the project area changes based on differences within each alternative and may be influenced by detectability.	The comment is generally correct that the estimate of desert tortoise within the Project site (not area, as the commenter states) changes based on differences within each alternative. The distribution and relative abundance of desert tortoise in the Project area is well known. The differences in density and abundance presented for each alternative are due to a detailed understanding of the tortoise distribution and abundance across the Project area. Different development areas are included in each alternative. Presence/absence surveys for desert tortoise yielded detailed results, and tortoise densities could be determined by development area. Differing soil conditions appear to greatly influence the density of desert tortoise in each

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						<p>development area. Should the Project be approved, the ROD would identify the allowable development areas.</p> <p>Detectability is factored into the formulas used for abundance surveys, as described in the Desert Tortoise Survey Reports (A-E) (incorporated into the Draft RMPA/EIS by reference). As stated on page 14 of the report, "Desert tortoise abundance estimates were calculated using the USFWS 2010 excel spreadsheet for estimating desert tortoise density in the action area (Exhibit 12). This calculation takes into account that not all desert tortoises within the action area are seen by the surveyor. To estimate the number of desert tortoises within the action area, the equation divides the number of adult tortoises (≥ 180 mm mean carapace length [MCL]) observed during the survey by the product of the probability that a tortoise is above ground during the survey (Pa) and the probability that a surveyor will see the tortoise if it is above ground (Pd). Pa is relative to the previous winter's rainfall, recorded in this case between October 2016 and March 2017 by the Western Regional Climate Center. In accordance with the USFWS protocol, Pa for this project is equal to 0.80 because the previous year's rainfall in the region was greater than 1.5 inches, and Pd is equal to 0.63, which is the standard searcher efficiency for presence/absence surveys. The rainfall total for the October 2016 to March 2017 period that was utilized in the calculations (Pa) was approximately 155 mm."</p> <p>Once an alternative is selected for approval in the ROD, if the Project is approved, the exact number of tortoises affected would be determined as part of the pre-construction process. The Biological Assessment and Desert Tortoise Translocation Plan included with the Final RMPA/EIS as an appendix, expand on the summary provided in the Draft RMPA/EIS with additional details on the desert tortoise clearance survey process. The Biological Assessment states on page 29 that once the Project site is fenced, clearance surveys would be conducted. All tortoises encountered would receive health assessments and radio transmitters would be affixed to a subset of tortoise. The exact number of tortoises in the Project site will be known at that time.</p>
A4-2	9/6/2019	Maples, Matt	Nevada Department of Wildlife	Threatened, Endangered, and Candidate Species	Although translocation of resident desert tortoise from within the project area is an approved Best Management Practice (BMP) for the project, NDOW supports minimizing the number of long-distance translocations as they can disrupt tortoise social networks and create physiological stress on individual animals.	The comment is acknowledged. The Hybrid and All Mowing Alternatives allow for tortoise to re-occupy mowed portions of the Project site after construction. No long-distance translocation to areas beyond the Project area has been proposed due to a lack of sites for translocation within the Northeast Mojave Recovery Unit. Three types of translocation could occur; short distance translocation, reintroduction, and distant translocation. With distant translocation, these tortoises would be translocated to a site south of development areas B and D. Careful thought and consideration will be taken into where each individual tortoise will be translocated to. Refer to Master Response 2: Mojave Desert Tortoise for more information on translocation.
A4-3	9/6/2019	Maples, Matt	Nevada Department of Wildlife	Alternatives	The Draft EIS includes three action alternatives and the required No Action Alternative. The Proposed Action Alternative includes clearing all vegetation and would require the highest number of long-distance translocations for desert tortoise. The number of long-distance translocations needed with this alternative is unrealistic given the limited number of qualifying recipient sites based on current FWS guidance. Further, this alternative results in complete habitat conversion and loss of ecosystem function within the project area.	The comment is consistent with the analysis that was presented in the Draft RMPA/EIS as stated on page 3-82, "Direct effects include the take of up to the estimated 215 adult tortoise (and the estimated 900 or more juveniles) expected to be found on the Project site during construction; death or injury to tortoises within the construction areas of the gen-tie line routes; and permanent loss of desert tortoise habitat." Clarifications were made in the Final RMPA/EIS to change "take" to "loss" in this sentence.

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						The alternatives, consistent with NEPA, were devised to address the otherwise substantial and adverse impact on desert tortoise and their habitat.
A4-4	9/6/2019	Maples, Matt	Nevada Department of Wildlife	Threatened, Endangered, and Candidate Species	The All Mowing Alternative includes mowing vegetation to a height of 18 to 24 inches in areas where solar arrays would be installed and avoids traditional clearing. However, the areas included in this alternative would affect the highest total number of desert tortoise (254).	The commenter is correct that as analyzed in the Draft RMPA/EIS, the All Mowing Alternative would impact a greater number of tortoises, approximately 254 adult desert tortoises, due to higher densities of desert tortoise in development areas G and B2. The Draft RMPA/EIS also explains that under this alternative, approximately 220 adult tortoises would be allowed to potentially reoccupy the Project site or translocated to the Project area after construction. The impacts, by alternative, are listed in the Draft RMPA/EIS at Table 3.8-2. Refer to Master Response 2: Mojave Desert Tortoise for more information on the types of effects on desert tortoise.
A4-5	9/6/2019	Maples, Matt	Nevada Department of Wildlife	Alternatives	The Hybrid Alternative (Preferred Alternative) includes mowing 65% of solar array areas and clearing the remaining 35% of the array areas. This alternative seeks to preserve some level of habitat function by reducing surface disturbance in the mowed areas and reduces the total number of affected tortoise (219) compared to the All Mowing Alternative. The Hybrid Alternative will result in reduced biological impacts compared to the original Proposed Alternative and NDOW appreciates the BLM's identification of the Hybrid Alternative as the Preferred Alternative in the Draft RMPA/EIS. Preliminary data from a small-scale project in southern Nevada suggest mowing may be conducive to maintaining habitat function and tortoise survival.	The comment is acknowledged. The purpose of the Hybrid Alternative is to reduce adverse and significant impacts to desert tortoise, among other impacts (e.g., OSNHT, hydrology, air quality). The Project site would be monitored long-term for the success of desert tortoise reoccupation through the Long-Term Monitoring Plan, required as part of the Section 7 consultation process. The preliminary data from the project identified by the commenter is noted.
A4-6	9/6/2019	Maples, Matt	Nevada Department of Wildlife	Alternatives	Since mowing is a relatively new technique without long-term or large-scale data, this alternative also provides an opportunity to further investigate the utility of this technique.	The comment is acknowledged. Long-term monitoring and study will be a requirement of the Section 7 consultation and Biological Opinion, and as described in Master Response 2: Mojave Desert Tortoise (under Mowing, as a New, Unproven Method), including the requirements for detailed monitoring plots and methods.
A4-7	9/6/2019	Maples, Matt	Nevada Department of Wildlife	Threatened, Endangered, and Candidate Species	Development methods that preserve some level of habitat suitability and reduce impacts to desert tortoise provide an opportunity to increase compatibility of solar energy development with wildlife conservation. How mowing and presence of solar panels affects plant survival and function, temperature and shading, and tortoise survival and reproduction remain a question.	The comment is acknowledged. Long-term monitoring and study will be a requirement of the Section 7 consultation and Biological Opinion, and as described in Master Response 2: Mojave Desert Tortoise (under Mowing, as a New, Unproven Method), including the requirements for detailed monitoring plots and methods.
A4-8	9/6/2019	Maples, Matt	Nevada Department of Wildlife	NEPA and Decision Process	As such, NDOW supports inclusion of a long-term monitoring plan and an adaptive management plan in the Final EIS to address these unknowns. We suggest these plans be coordinated among BLM, NDOW, and FWS and finalized before the Final EIS and Record of Decision.	A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion.
A4-9	9/6/2019	Maples, Matt	Nevada Department of Wildlife	Threatened, Endangered, and Candidate Species	Additionally, we continue to support, when necessary, translocating tortoises immediately outside the perimeter fence or to the southernmost reaches of the larger 44,000-acre lease area rather than to long distance recipient sites. While it is a BMP, reducing long distance translocations has relevance to this and other pending projects because the number and capacity of recipient sites is limited.	The comment is acknowledged. The limitations on areas available for translocation were identified on page 3-82 of the Draft RMPA/EIS, which states that, "The Proposed Action would result in the direct or indirect take of up to all tortoises found on the Project site, since there are no places within the Northeastern Mojave Recovery Unit where the tortoises can be moved." Three types of translocation could occur; short distance translocation, reintroduction, and distant translocation. With distant translocation, these tortoises would be translocated to a site south of development areas B and D. Careful thought and consideration will be taken into where each individual tortoise will be translocated to. Refer to Master Response 2: Mojave Desert Tortoise for more information on translocation.

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A5-1	7/29/2019	McKay, Deann M.	Nevada Division of State Lands	Consultation, Coordination, and Public Involvement	In reviewing the Gemini Solar Project below, its noted to be adjacent to the Valley of Fire State Park. Should any components of the project require use of state owned land, the proponent would need to submit an application to the Nevada Division of State Lands which can be found here: http://lands.nv.gov/uploads/documents/APPLICATION_FORM_StateLands2019Fillable.pdf	The Project would not use state-owned land during any components of the Project. Construction traffic would travel along I-15 and would not travel through the state park. Therefore, submittal of an application to the NDSL would not be required.
A6-1	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	The Tribes are concerned that BLM has not conducted the requisite “hard look” at environmental consequences of this project under the National Environmental Protection Act (NEPA) and the National Historic Preservation Act (NHPA), particularly those consequences related to cultural resources.	The BLM has prepared the RMPA/EIS to be compliant with NEPA and Secretarial Order (SO) 3355. A thorough analysis that included numerous cooperating agency consultations was undertaken. The analysis in the Draft RMPA/EIS was supported by an additional 22 technical studies and analyses, available on the BLM's ePlanning website. Environmental consequences were extensively studied and considered in compliance with NEPA. Cultural resources were evaluated for their eligibility to the NRHP under Title 54 USC. § 300101, et. seq., commonly known as the NHPA of 1966, as amended, and Title 54 USC § 306108, commonly known as Section 106 of the NHPA (Section 106).
A6-2	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Consultation, Coordination, and Public Involvement	BLM has also misrepresented the extent of its tribal consultation under Section 106. The Tribes thus urge BLM to comply fully with the consultation mandate of Section 106, clarify its efforts to date to gather tribal input, and provide a more thorough analysis of potential effects to Native American cultural resources in the final EIS.	The BLM understands that CRIT stated that the BLM did not conduct a government-to-government consultation for the Gemini Solar Project. According to CRIT’s internal policy, the BLM is to meet informally with the CRIT Historic Preservation staff prior to having a formal consultation with CRIT Council. On February 13, 2019 the BLM Las Vegas Field Manager and Cultural Resources staff met with CRIT’s Historic Preservation and presented Gemini Solar Project PowerPoint, amongst other projects. BLM understands that this was informal consultation and that formal consultation was still required. Following the February 13th informal consultation meeting, BLM requested from CRIT’s Historic Preservation staff to have a formal consultation meeting scheduled with CRIT’s Council. Between February and September of 2019, the BLM continued to request a meeting be scheduled with CRIT’s Council through telephone and email. As of late September 2019, the BLM had been unable to schedule a formal consultation meeting date. According to the BLM Handbook 1780-1 Improving and Sustaining BLM-Tribal Relations (P), Chapter II section I, the BLM has made reasonable efforts to conduct a government-to-government consultation in good faith.
A6-3	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	<p>As a preliminary matter, the Colorado River Indian Tribes are a federally recognized Indian tribe comprised of over 4,440 members belonging to the Mohave, Chemehuevi, Hopi and Navajo Tribes. The almost 300,000-acre Colorado River Indian Reservation sits astride the Colorado River between Blythe, California and Parker, Arizona. The ancestral homelands of the Tribes’ members, however, extend far beyond the Reservation boundaries. Significant portions of public and private lands in California, Arizona, and</p> <p>Nevada were occupied by the ancestors of the Tribes’ Mohave and Chemehuevi members since time immemorial. These landscapes remain imbued with substantial cultural, spiritual, and religious significance for the Tribes’ current members and future generations. For this reason, we have a strong interest in ensuring that potential cultural resource and other environmental impacts associated with the proposed Gemini Solar Project are adequately considered and mitigated.</p>	<p>The comment is acknowledged. Cultural resources were addressed in Section 3.12 of the Draft RMPA/EIS, as required under NEPA. Consultations are being performed by the BLM under the Section 106 of the NHPA process. Archaeological resources of prehistoric origin were identified and the impacts to those resources were addressed. A detailed study was prepared entitled "Class III Cultural Resource Inventory of Approximately 11,050 Acres for the Gemini Solar Project, Near Crystal, Clark County, Nevada." The study includes information on the location and nature of archaeological resources in the study area and is confidential.</p> <p>The reference to concern over other environmental impacts being adequately addressed is acknowledged, but the specific concerns are not identified, and therefore, cannot be addressed.</p>
A6-4	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	NEPA requires BLM to take a hard look" at the environmental consequences of a proposed action. This "hard look" mandate includes an assessment of ecological, aesthetic, historic, cultural, social, or health impacts and effects "whether direct, indirect, or cumulative." 40 C.F.R. § 1508.8. The DRMPA/EIS falls short of this clear mandate. For many potential impacts, BLM's analysis is cursory and makes few or no	Under SO 3355, the EIS is mandated to be under a particular page limit (150 pages for EISs and 300 pages for unusually complex projects). Over 22 support studies and technical documents were incorporated by reference into the Draft RMPA/EIS that expanded on analyses summarized in the Draft RMPA/EIS. All of these studies were available with the Draft

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					distinctions between alternatives. And even where it does distinguish between alternatives, analysis is similarly lacking.	RMPA/EIS through the ePlanning website for the entire 90-day public review of the Draft RMPA/EIS. Specific concerns are addressed in the following responses.
A6-5	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Threatened, Endangered, and Candidate Species	For example, CRIT is concerned about BLM's analysis with respect to potential impacts on Mojave Desert tortoises-an endangered species important to CRIT and its members. The DRMPA/EIS summarily concludes that the "All Mowing" alternative and the hybrid alternative will allow the tortoises displaced by initial mowing of their habitat to return and inhabit the area once the Project is built. As various environmental groups have pointed out, this assertion is not supported by scientific analysis. See, e.g., Desert Wildlands Need Your Voice in Vegas, Mojave Desert Blog (July 20, 2019), http://www.mojavedesertblog.com/2019/07/desert-wild-lands-need-your-voice-in.html ; see also DRMPA/EIS at 3-86, 3-88 (noting that indirect effects may include disease or increased vulnerability to predation as a result of "translocation" but failing to specify the number of tortoises expected to be affected either during or after the move).	The Draft RMPA/EIS recognized the potential for impacts to desert tortoise, even in mowed areas. Refer to Master Response 2: Mojave Desert Tortoise for a description of how mowing, as an unproven method was addressed in the Draft RMPA/EIS, the uncertainty in the methods and the monitoring that will be employed. The Draft RMPA/EIS adequately disclosed the impacts.
A6-6	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Threatened, Endangered, and Candidate Species	BLM must realistically address the unavoidable and significant effects the Project will inflict upon this tortoise population-a species that BLM recognizes has cultural significance to local Indian tribes. DRMPA/EIS at 3-134.	Refer to Master Response 2: Mojave Desert Tortoise information on how effects to desert tortoise have been addressed in the RMPA/EIS.
A6-7	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	The description of tribal concerns within the DRMPA/EIS, which at various points asserts that there will be no impact on tribes, is similarly cursory. Despite BLM's acknowledgement that the area is of great religious and cultural importance to area tribes, see DRMPA/EIS App. F at viii-xiv (providing a detailed ethnography of tribes in the region), the DRMPA/EIS frequently dismisses concerns about "Native American" resources with almost no discussion. For example [provided in following comments]:	Master Response 9: Tribal Concerns explains how tribal concerns were addressed in the Draft RMPA/EIS, including the substantiation of conclusions. Various resources are noted as religiously significant, and analyzed in the RMPA/EIS (refer to Response to Comment A6-9 for a detailed response to the concerns identified by the commenter). The conclusions are substantiated with more than cursory information.
A6-8	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	"Construction and operation of the Proposed Action would most likely result in the removal of plant species important to Native Americans," but "[i]mpacts would not be adverse because the Project site does not support rare medicinal or food source plants that cannot be found in the surrounding areas." DRMPA/EIS at 3-134, 3-135.	The quotation is taken out of context and has been truncated, which changes the meaning of what was actually included in the Draft RMPA/EIS. The Draft RMPA/EIS states, "Impacts would not be adverse because the Project site does not support rare medicinal or food source plants that cannot be found in the surrounding areas, and any important plants that are present are also readily available in the region." Refer to Master Response 9: Tribal Concerns regarding the substantiation of this conclusion.
A6-9	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	"Desert tortoise is often mentioned by the Moapa Band of Paiutes as a species that should be protected and was once a food source. The Proposed Action would result in adverse impacts on desert tortoise." Id. at 3-135. But one sentence later: "Construction and O&M would not have adverse effects on Native American religious concerns related to culturally important plants and animals." Id. It is unclear how and where this "religious" analysis was conducted, but in any case, the "Native American" section lacks any further analysis of impacts on desert tortoise populations.	The analysis of impacts on desert tortoise as a species important to the Moapa Band of Paiutes from implementation of the Proposed Action has been revised in the Final RMPA/EIS to be consistent with the conclusion of other sections of the Draft RMPA/EIS (e.g., Section 3.8: Threatened, Endangered, and Candidate Species). Refer to Master Response 9: Tribal Concerns regarding the substantiation of conclusions related to impacts to Native American religious concerns.
A6-10	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	Cumulative projects in the area "could affect known and unknown TCPs, resulting in a cumulative loss of resources considered by local tribes to be significant" and "could cumulatively affect the populations of plant and game species important to Native Americans," but "would not be substantial." Id. at 3-136. It is unclear how BLM arrived at the conclusion that cumulative projects would not produce a substantial impact, given that the DRMPA/EIS does not quantify other projects' impacts.	The analysis does not state that cumulative impacts would not be substantial. Refer to Master Response 9: Tribal Concerns for a discussion of the cumulative impacts on TCPs and why the Project would not contribute to a cumulative impact. The master response also addressed how impacts to general vegetation were addressed and how cumulative habitat impacts were quantified in the context of desert tortoise habitat impacts. A cross reference to the analysis of cumulative impacts in Section 3.8: Threatened, Endangered, and Candidate Species has been added into Section 3.13: Native American Religious Concerns in the Final RMPA/EIS.

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A6-11	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	In fact, the DRMPA/EIS fails to provide any numerical or even anecdotal analysis of effects of other projects in the area on Native American cultural, plant, and wildlife resources. CRIT urges BLM to include such analysis in the final EIS because not only would it provide a clearer picture of the current impacts in the Project area, but it could also be instructive in estimating the impacts of this particular project.	Refer to Response to Comment A6-10 and Master Response 9: Tribal Concerns . A cross reference to the quantitative analysis of impacts to desert tortoise habitat and native plant communities, which would encompass the impacts to Native American cultural plant and wildlife resources, has been added to Section 3.13: Native American Religious Concerns in the Final RMPA/EIS.
A6-12	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Consultation, Coordination, and Public Involvement	Absent the type of meaningful Section 106 consultation described below with all potentially-affected tribes, BLM's identification and analysis of cultural resources remains inadequate and underdeveloped.	Refer to Response to Comment A6-2 for information on the BLM's consultation with CRIT.
A6-13	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	Likewise, BLM must specify in greater detail the cultural resource sensitivity training for archaeologists and how tribal consultants or monitors will be involved.	Refer to MM CR-2 in Appendix H. The measure includes a requirement for a Cultural Resources Monitoring and Mitigation Plan, which must be approved by the BLM prior to construction. The measure also specifies the cultural resources sensitivity training, including, "Construction personnel shall be informed of the avoidance areas for eligible archaeological sites, the importance of remaining only within the designated Project site development areas, of the types of cultural resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources, including consequences for vandalism or theft." Due to the few archaeological resources identified on the Project site during the cultural resources inventory for the Project, and the requirement for avoidance of archaeologically sensitive areas, such as the TCP and within development area F, a requirement for a tribal monitor has not been included. The developer may choose to hire tribal monitors and the tribes would be notified of any significant discoveries during construction.
A6-14	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	Despite BLM's proposed mitigation measures, the Tribes remain concerned about potential removal of artifacts from this area and the corresponding destruction of the Tribes' footprint on this landscape. In particular, CRIT appreciates efforts to minimize cultural resource harms in MM CR-2, but strongly opposes the use' of data recovery as a mitigation measure on the grounds that such excavations undermine the Tribes' connection to their ancestral homeland. MM CR-2 should accordingly be revised to encourage in-situ or onsite reburial where avoidance is not possible.	The comment is acknowledged. Master Response 9: Tribal Concerns addresses that the measure, as written, requires that "the BLM shall consult with appropriate Native American representatives in determining appropriate treatment for the prehistoric cultural resource sites." This provision allows the tribes to recommend in-situ or onsite reburial, depending on the resource identified
A6-15	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Consultation, Coordination, and Public Involvement	Section 106 of the National Historic Preservation Act requires an agency "to consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to historic properties that may be affected by an undertaking." 36 C.F.R. § 800.2(c)(2)(ii). The Colorado River Indian Tribes has adopted a government-to-government consultation policy to clarify the requirements of adequate consultation under Section 106 and similar federal or state laws. See Exhibit 1. In particular, adequate consultation requires an in-person meeting between a decisionmaker "prepared with sufficient details about the proposed project or action, the Tribes' history, culture, and government, and the Tribes' anticipated or specific concerns with respect to the proposed action." Id. at 3-4. BLM has, to date, not complied with this mandate.	Refer to Response to Comment A6-2 for information on the BLM's consultation with CRIT.
A6-16	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Consultation, Coordination, and Public Involvement	BLM has acknowledged that eight tribes in the region have "traditional ties to the project site." DRMPA/EIS at 3-133. The agency has identified CRIT as one of these eight tribes, and represents that it conducted consultation with the Tribes on March 26, 2019. See id. at 3-133, tbl. 3.13-1. However, the DRMPA/EIS later states that BLM conducted "formal consultation" with seven tribal governments and CRIT is noticeably absent. Id. at 4-1, 4-2. CRIT similarly cannot verify that the reported BLM outreach efforts took place. This is particularly troubling in light of the fact that the DRMPA/EIS relies on the assertions that "none [of the tribes listed in Table 3.13-1) have expressed specific concerns about the Project to date," id. at 3-134, and that "[m]ost tribes deferred to the Moapa Band of Paiutes for identifying	Refer to Response to Comment A6-2 for information on the BLM's consultation with CRIT.

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					issues and concerns," id. at 4-1, in dispensing with the majority of the "Native American Concerns" related to the Project.	
A6-17	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Consultation, Coordination, and Public Involvement	While CRIT appreciates BLM's acknowledgement of the need to consult with local tribes, the Tribes urge BLM to clarify the extent of the consultation conducted and to engage in meaningful consultation with CRIT and any other tribes with sacred ancestral lands within the planning area before proceeding with the RMPA/EIS's cultural resource analysis. Under the mandate of Section 106, such government-to-government consultation must include BLM representatives with sufficient knowledge and decision making authority and must be conducted in a manner that is respectful of tribal sovereignty. A mere letter or phone call is insufficient.	Refer to Response to Comment A6-2 for information on the BLM's consultation with CRIT.
A6-18	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	Finally, the Tribes encourage BLM to clarify how local tribal representatives will be involved in monitoring during construction and operation of the Project. While the DRMPA/EIS notes that the Moapa Band has requested "the hiring of a tribal liaison," BLM should more clearly commit to doing so and further specify what the role of this liaison will be. DRMPA/EIS at 4-1.	The commenter's request is acknowledged. Due to the few archaeological resources identified on the Project site during the cultural resources inventory for the Project, and the requirement for avoidance of archaeologically sensitive areas, such as the TCP and within development area F, a requirement for a tribal monitor has not been included. The developer may choose to hire tribal monitors and the tribes would be notified of any significant discoveries during construction.
A6-19	8/21/2019	Patch, Dennis	Colorado River Indian Tribes	Native American Concerns	Given that the Project will require disruptive excavation under any alternative, comprehensive monitoring is necessary. The DRMPA/EIS should be revised to clarify that archaeological monitoring and tribal monitoring will be required for all ground-disturbing activities, including grading, disc and roll, and pile of stake driving, mechanical excavation, drilling, digging, trenching, blasting, or other similar actions. To reduce impacts to the extent feasible, tribal monitors must be present for all the activities described above and whenever machines are active.	Refer to Response to Comment A6-18. A requirement for a tribal monitor has not been included in the RMPA/EIS. Refer to Master Response 9: Tribal Concerns for the discussion of the requirements for Native American consultation in determining treatment of any prehistoric cultural resources sites.
A7-1	8/1/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Native American Concerns	This is a vast amount of land directly south of the Reservation. The Tribe is currently working with Gemini's developer, Arevia, to better understand the Gemini Project and whether the Tribe's interests in the area can be protected. Those discussions are not yet complete.	The BLM conducted government-to-government consultations over several months prior to the release of the Draft RMPA/EIS, pursuant to Section 106 of the NHPA, expanding on larger efforts undertaken by BLM to consult on renewable energy projects in southern Nevada. Consultation with tribes in regard to this Project will continue until the conclusion of the Section 106 process. The tribe's consultation efforts with Arevia are acknowledged.
A7-2	8/1/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Native American Concerns	Furthermore, the Tribe is also working with Clark County and other local stakeholders to advance federal legislation that may impact the Gemini Project area. One proposal being considered is for Congress to convey a portion of the lands covered by the right-of-way application from federal ownership to the Tribe's ownership.	The comment is acknowledged. The Draft RMPA/EIS identifies this situation on page 3-12, where it states, "the Project overlaps with tribal expansion areas, which could limit use of this land, but would not deter the disposal."
A7-3	8/1/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Consultation, Coordination, and Public Involvement	For these reasons, the Tribe respectfully requests that BLM extend the comment period for the DEIS by an additional 60 days. This extra time will allow the Tribe to better assess the proposed action and BLM's environmental analysis, to work with Arevia and other stakeholders to resolve concerns, and provide constructive comments to BLM.	The comment period was conducted according to NEPA requirements for a Draft RMPA/EIS (516 DM 4.26). In addition, the Section 106 consultation process occurs separately from the NEPA RMPA/EIS comment period, and is ongoing throughout the duration of the NEPA process. Consultation would conclude with an MOA, which is required to record the agreed upon resolution for a project with a defined beginning and conclusion, where adverse effects are understood between the BLM and the Tribe. As a FAST41 project, the schedule set on the Dashboard must be adhered to.
A8-1	6/12/2019	Whitfield, Brenda	Clark County Department of Air Quality	Air Quality and Climate Change	DAQ determines that this action should have no significant impact to ambient air quality. The project is located within Hydrographic Area 216, Apex Valley (HA-16), which is in attainment or unclassified for all criteria pollutants. PM10 is the pollutant primarily associated with construction activities and there are several provisions of the Clark County Air Quality Regulations (AQRs) that regulate proposed construction within Clark County.	As analyzed in the Draft RMPA/EIS, discrete, local exceedances of NAAQS/SAAQS would occur. At a distance of 200 meters from the boundary of the maximum emission source locations (i.e., gen-tie lines and well), exceedances of NAAQS/SAAQS from construction activities would be diminished (Ratte 2019). The Project would not have a significant impact on regional ambient air quality during construction, as the Project is required to comply with Section 94 of the Clark County AQRs. MM AQ-1,

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						in Appendix H, requires incorporation of several fugitive dust and equipment emission control measures into the required Dust Control and Air Quality Plan. A Dust Control Permit is required during construction, as specified per the regulations. Refer also to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust regarding Clark County's jurisdiction over dust control.
A8-2	6/12/2019	Whitfield, Brenda	Clark County Department of Air Quality	Air Quality and Climate Change	In addition, and at a minimum, construction activities taking place will be subject to all applicable (AQRs).	Refer to Response to Comment A8-1.
A8-3	6/12/2019	Whitfield, Brenda	Clark County Department of Air Quality	Air Quality and Climate Change	Section 94 of the AQRs requires that a dust control permit be obtained prior to: (i) soil disturbance or construction activities that impact 0.25 acres or greater, (ii) mechanized trenching 100 feet or greater in length, or (iii) mechanical demolition of any structure 1,000 square feet or greater. Construction activities include, but are not limited to, land clearing; soil and rock excavation, removal, hauling, crushing, or screening; initial landscaping; staging and material storage areas; parking; and access roads.	Refer to Response to Comment A8-1.
A8-4	6/12/2019	Whitfield, Brenda	Clark County Department of Air Quality	Air Quality and Climate Change	Additionally, Best Available Control Measures must be employed during construction activities at all times. These measures are described in the Construction Activities Dust Control Handbook, which is available online at: http://www.clarkcountynv.gov/airquality/compliance/Pages/Compliance_DustForms.aspx	Refer to Response to Comment A8-1. The Dust Control and Air Quality Plan will include all required fugitive dust and equipment emission control measures, including Best Available Control Measures, as applicable, as well as the ones defined in MM AQ-1.
A8-5	6/12/2019	Whitfield, Brenda	Clark County Department of Air Quality	Air Quality and Climate Change	Section 94 of the AQRs also require that a construction project involving: (i) ten acres or more, (ii) trenching activities one mile or greater in length, or (iii) structure demolition using implosive or explosive blasting techniques, shall include a detailed supplement to the dust mitigation plan that will become part of the dust control permit as an enforceable permit condition.	Refer to Response to Comment A8-1.
A8-6	6/12/2019	Whitfield, Brenda	Clark County Department of Air Quality	Air Quality and Climate Change	Any construction project having more than 50 acres of actively disturbed soil at any given time is required to have a Dust Control Monitor as described in Section 94.7.5 of the AQRs. In addition, an application for a Dust Control Permit for a project of 50 acres or more shall contain an actual soils analysis of the entire project.	Refer to Response to Comment A8-1.
A8-7	6/12/2019	Whitfield, Brenda	Clark County Department of Air Quality	Air Quality and Climate Change	Section 91 of the AQRs restricts construction of unpaved roads or alleys in public thoroughfares within HA 216. It also requires owners and/or operators of existing unpaved roads, constructed prior to April 1, 2002, to implement applicable control measures as described in Section 91.2.1.3 of the AQRs: pave, apply dust palliatives or apply and maintain alternative dust control measures approved in writing by the Control Officer and the Region 9 Administrator of the EPA.	The Project would implement MM AQ-1, which would require preparation of a Dust Control and Air Quality Plan to reduce fugitive dust and equipment controls emissions during construction of the Project, in compliance with the AQRs. The Project would also be required to receive a Dust Control Permit from the Clark County Department of Air Quality prior to construction.
A8-8	6/12/2019	Whitfield, Brenda	Clark County Department of Air Quality	Air Quality and Climate Change	Section 12 of the AQRs requires issuance of a stationary source permit for any applicable source located in Clark County that has a potential to emit a regulated air pollutant that is equal to or greater than the thresholds listed in that section. However, a definitive determination cannot be made until a complete application is submitted to DAQ and reviewed for applicability.	Generators of varying sizes would be installed as part of the Project. The exact sizes and quantities of generators would be dependent upon final engineering design. A Minor Source Permit or Authority to Construct Permit may be required, dependent upon the generators installed as part of the final approved design. Section 12.1 and Section 12.4 of the Clark County AQRs will be consulted to determine the appropriate permit. Table 1.6-1 has been updated in the Final RMPA/EIS to include these permits.
A9-1	8/26/2019		NDEP, BWPC	Consultation, Coordination, and Public Involvement	The project may be subject to BWPC permitting. Permits are required for discharges to surface waters and groundwaters of the State (Nevada Administrative Code NAC 445A.228). BWPC permits include, but are not limited to, the following: · Stormwater Industrial General Permit · De Minimis Discharge General Permit	The anticipated permits were identified in Table 1.6-1 of the Draft RMPA/EIS. Permits that may be applicable have been added to the Table in the Final RMPA/EIS, including: - Pesticide General Permit

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					<ul style="list-style-type: none"> · Pesticide General Permit · Drainage Well General Permit · Temporary Permit for Discharges to Groundwater's of the State · Working in Waters Permit · Wastewater Discharge Permits · Underground Injection Control Permits · Onsite Sewage Disposal System Permits · Holding Tank Permits 	<ul style="list-style-type: none"> - Working in Waters Permit - Wastewater Discharge Permits - Holding Tank Permits
A9-2	8/26/2019		NDEP, BWPC	Consultation, Coordination, and Public Involvement	<p>Additionally, the Applicant is responsible for all other permits that may be required, which may include, but may not be limited to:</p> <ul style="list-style-type: none"> · Dam Safety Permits - Division of Water Resources · Well Permits - Division of Water Resources · 401 Water Quality Certification - NDEP · 404 Permits - U.S. Army Corps of Engineers · Air Permits - NDEP · Health Permits - Local Health or State Health Division · Local Permits - Local Government 	The anticipated permits were identified in Table 1.6-1 of the Draft RMPA/EIS. All permits listed here appear in the table except for Dam Safety Permits, as no dams or impoundments would be constructed. Health permits have not been identified as needed.
A10-1	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Native American Concerns	<p>The Gemini Project is slated to occupy and impact at least 7,100 acres of land immediately adjacent to the Tribe's Reservation. In addition, the current right-of-way application covers an area over 6 times as large- 44,000 acres total. All these lands are within the Tribe's judicially established aboriginal lands and within its prior 2-Million-acre Reservation, where the Tribe has practiced its subsistence, religious, cultural and other ways of life for centuries. The project area is so massive and so close to the Reservation, its impacts are far-ranging.</p>	<p>The remainder of the ROW application area (approximately 36,900 acres [14,933 hectares]) would remain undeveloped under the current proposal, and would be managed by the BLM. The ROW grant, if approved, would only apply to the approximately 7,100-acre (2,873-hectare) Project site or the minimum acreage needed to generate 690 MW with battery storage (per MM WILD-1 in Appendix H).</p> <p>Page 3-132 of the Draft RMPA/EIS acknowledges that the Project site falls within tribal traditional use area generally attributed to the Southern Paiute, of which the Moapa Band of Paiutes is a tribe with Southern Paiute heritage. The use of the certain wildlife and plants found on the Project site for subsistence and their importance religiously are acknowledged on page 3-134. The impacts of the Project, including on wildlife and vegetation, are analyzed throughout the Draft RMPA/EIS. Refer also to Master Response 9: Tribal Concerns for an explanation of how the Draft RMPA/EIS addressed traditional values and resources.</p> <p>Through consultation with the Moapa Band of Paiutes, one of the cultural sites found during surveys has been identified as a TCP. Other places in the Project area, such as the Muddy Mountains and Arrow Canyon Range, are noted on page 3-134 and in Appendix F as important to the Southern Paiute and specifically the Moapa Band of Paiutes. The Moapa Band of Paiutes has not identified any specific areas within the Project site or area of religious importance to either the consulting survey team led by A.J Thompson of Knight and Leavitt, nor during Section 106 government-to-government consultations with the BLM. The archival records searches, conducted through the NVCRIS, the Nevada SHPO, and the Southern Nevada Archaeological Archive Database, did not reveal any other locations of significance.</p>
A10-2	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Native American Concerns	The project area includes many places that remain important to the Tribe for religious and cultural purposes.	Refer to the Response to Comment A10-1.
A10-3	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Consultation, Coordination,	By letter dated August 1, 2019, the Tribe requested extra time to respond to the Draft RMPA/EIS, a request that BLM formally ignored. Recently, BLM told us informally that the Tribe that we could have until early October to submit a comment. This is insufficient time to adequately review and comment on	The letter dated August 1, 2019 was received and has been addressed (refer to Responses to Comments A7-1 through A7-3). The Tribe's letter dated October 11, 2019 has also been included in the record and is receiving

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				and Public Involvement	the Draft RMPA/EIS. The document is 211 pages, not including appendices, and covers many topics. Considering the vast amount of land directly south of the Reservation that would be affected by the Gemini proposal, the Tribe should have received adequate time.	consideration and response, despite the formal closure of comments on September 6, 2019. The comment period was conducted according to NEPA requirements for a Draft RMPA/EIS (516 DM 4.26). In addition, the Section 106 consultation process occurs separately from the NEPA RMPA/EIS comment period, and is ongoing throughout the duration of the NEPA process. Consultation would conclude with an MOA, which is required to record the agreed upon resolution for a project with a defined beginning and conclusion, where adverse effects are understood between the BLM and the Tribe. As a FAST41 project, the schedule set on the Dashboard must be adhered to.
A10-4	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	BLM Management	Furthermore, a good portion of the project area has been sought after by the Tribe for many years to partially compensate the Tribe for Congress' decision to reduce its Reservation from 2 million acres. The Gemini project would directly contravene with those ongoing plans. Currently, the Tribe is working with Clark County and other local stakeholders to advance federal legislation that would impact the Gemini Project area. The proposal being considered is for Congress to convey a portion of the lands covered by the Project and right-of-way application from federal ownership to the Tribe's ownership.	The legislation is included in the cumulative analyses for the Project, as was identified in Table 3.0-2 of the Draft RMPA/EIS on page 3-5, project number 26. The potential cumulative impacts to the Tribe were addressed on page 3-12 of the Draft RMPA/EIS, where it stated that, "The Project overlaps with tribal expansion areas, which could limit use of this land, but would not deter the disposal." The development would not prevent the disposal from moving forward. Should the land change ownership, the Tribe would take over the ROW and the rental agreements. The Draft RMPA/EIS acknowledges the impacts.
A10-5	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	BLM Management	<p>The Tribe has dedicated its time and energy to this federal legislation for a long time. During the 113th and 114th Congresses, the Tribe worked with the Nevada delegation to introduce legislation that would require the Secretary of the Interior to take almost 26,000 acres of BLM land adjacent to the Reservation into trust for the Tribe and add those lands to the Moapa</p> <p>Reservation. Although those bills did not come to a floor vote, the Tribe has remained committed to pursuing similar legislation in the 115th Congress with the support of the Nevada delegation, BLM and the local community. The earlier iterations of the bill included areas on which the Gemini project is proposed.</p>	Refer to Response to Comment A10-4. The Project would be on lands that could become part of the disposal but would not deter the disposal nor transfer of the lands on which the solar field is located.
A10-6	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Consultation, Coordination, and Public Involvement	The Tribe looks forward to working with BLM to address concerns raised during the Draft RMPA/EIS process that might impact legislation returning BLM lands to Tribal ownership. The Tribe also requests that BLM engage in government-to-government consultation with the Tribe before issuing an FEIS, Record of Decision or lease allowing the Project to move forward. The consultation would specifically address potential lease language that would protect the Tribe's rights in the event the Project site is transferred to the Tribe by Congress.	The BLM conducted government-to-government consultations over several months with the Moapa Band of Paiutes, pursuant to Section 106 of the NHPA, expanding on larger efforts undertaken by BLM to consult on renewable energy projects in southern Nevada. The Section 106 consultation process occurs separately from the NEPA RMPA/EIS comment period, and is ongoing throughout the duration of the NEPA process. Consultation would conclude with an MOA, which is required to record the agreed upon resolution for a project with a defined beginning and conclusion, where adverse effects are understood between the BLM and the Tribe.
A10-7	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Air Quality and Climate Change	In 2017, the Tribe passed a Fugitive Dust Ordinance to control dust emission within the Reservation. This ordinance is on par with Clark County dust control regulations. Any individuals who come onto the Reservation from adjoining BLM public lands and create fugitive dust emissions in violation of the Tribe's ordinance could be subject to civil fines and abatement/remediation costs. The Tribe's ordinance constitutes a tribal plan germane in the development of land use plans for public lands under 43 U.S.C. § 1712(c)(9) and should be considered in BLM's analysis of cumulative impacts and fugitive dust issues. See also 40 C.F.R. § 1506.2(d) ("[Environmental impact] statements shall discuss any inconsistency of a proposed action with any approved State or local plan and laws (whether or not federally sanctioned). Where an inconsistency exists, the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law."). The Tribe can provide a copy of its dust control ordinance to BLM upon request.	The Draft RMPA/EIS analyzed fugitive dust impacts associated with implementation of the Project in Section 3.9: Air Quality and Climate Change. The Project would require a Surface Area/Dust Mitigation Control Plan under Clark County Department of Air Quality and Environmental Management. As analyzed, with implementation of fugitive dust controls during operation, no adverse effects would occur associated with the Project. Fugitive dust is estimated to be lower than existing conditions due to the sparse vegetation cover and windy conditions under existing conditions. The regulation of air quality impacts is under the jurisdiction of Clark County and would be implemented and enforced through a binding authorization from the County. Since the Project would be held to the standards of the County's requirements, which are on par with the Tribe's ordinance, dust control should be in compliance with the Tribe's ordinance

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						as well. Construction of the solar facility would not occur on tribal land. Individuals would not come onto to tribal land and generate fugitive dust on tribal lands. Should construction of a pipeline for water be approved, construction dust on tribal land would be subject to the tribe's ordinance for any ground disturbance on tribal lands. Refer also to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust regarding Clark County's jurisdiction over dust control.
A10-8	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Water Resources	We remind BLM that the hydrogeology of the region, as well as the surface and groundwater rights of the Tribe and others, are the subject of extensive and ongoing study by other federal agencies, including the U.S. Fish and Wildlife Service, as well as by the Nevada State Engineer and other entities with regional water interests, including the Tribe. The Nevada State Engineer continues to address ongoing water permit applications and disputes via the Order 1303 process described in the DEIS.	The regulatory setting for groundwater rights in the area was reviewed and detailed in the Informational Summary of Water Rights, Supply and Use, available on the ePlanning website. The Draft RMPA/EIS analyzed impacts on surface and groundwater from implementation of the Project in Section 3.5: Water Resources. As discussed in the Draft RMPA/EIS, per Interim Order #1303, the State Engineer has placed a moratorium on new water appropriations in the flow system until a sustainable yield amount can be determined. A Change in Use, Manner of Use, and Point of Diversion from the State Engineer would be required to allow on-site groundwater extraction. Purchase or temporary transfer of existing off-site existing appropriations of water sources could occur instead, which would not be prevented by Interim Order #1303.
A10-9	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Water Resources	<p>In general, we agree with BLM that "[b]ased on modeling, there would be no groundwater drawdown impacts from Project pumping at the Muddy River or the springs feeding the Muddy River that support Moapa dace." See p. 3-84. However, the Tribe disagrees that the perennial groundwater yield of Basin 218 is limited to 2,200 afy (see p. 3-31). The annual yield of the Basin, and the entire L WRFS, is being actively debated in a hearing before the State Engineer under Order 1303. The Tribe currently possesses permits to appropriate 2,500 afy of groundwater from Basin 218 and intends to utilize its water rights for its own economic development</p> <p>opportunities. BLM' s position that 2,200 afy is the perennial yield potentially damages the Tribe's ability to use and market its water rights.</p> <p>The Tribe has both important state-based rights as well as a potential claim to unquantified federally-reserved water rights, which would have a date-of-reservation priority date. The United States-including BLM-has a trust responsibility to protect the Tribe's water rights in the region.</p>	The Groundwater Impact Analysis Report on page 2-5 acknowledges that the Moapa Band of Paiutes has a permitted right to appropriate water for municipal use and that total diversions from the wells are not to exceed 2,500 acre-feet (308 hectare-meters) annually or 5 cubic feet (0.14 cubic meter) per second (NDWR 2008). The reference to a perennial yield of 2,200 acre-feet (249 hectare-meters) of water per annum for Basin 218, is from the Nevada Division of Water Resources (NDWR), Hydrographic Area Summary and United States Geographical Survey (USGS), Groundwater Quality in Nevada - A Proposed Monitoring Program (NDWR 2018, USGS 1986). The statement is not BLM's position or stand on the perennial yield, but a cited quantity identified in a publication. As stated in the Draft RMPA/EIS, the existing water rights in Basin 218 far exceed the perennial yield. However, the sustainable yield of the overall Lower White River Flow System (LWRFS) is not currently known, and as such, the same holds true for the individual basins within the LWRFS (page 14 of the Informational Summary of Water Rights, Supply, and Use).
A10-10	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Socioeconomics and Environmental Justice	The Project appears to create greater risk of damaging flood events within California Wash where it flows through the Reservation. Although BLM believes that such events are rare, see p. 3-36, in fact such events are not all that rare and are likely to increase in both frequency and intensity due to climate change. BLM writes off these increased impacts to the Reservation without proper analysis. This is a huge environmental justice issue. See Exec. Order 12898 (Feb. 11, 1994) (requiring agencies to "address[], as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.").	<p>The Clark County RFCD would review and have jurisdiction to approve the Project's Drainage Study (Table 1.6-1 of the Draft RMPA/EIS). In accordance with the Hydrologic Criteria and Drainage Design Manual, the flow and rate of flow downstream shall not increase from upstream uses, within reason, unless existing drainage systems are capable of handling the increase (Sections 303.1.1 and 303.1.2).</p> <p>The Drainage Study and Section 3.5: Water Resources of the Draft RMPA/EIS addressed flooding impacts. Under the Proposed Action and each alternative, downstream flow increases were modeled. The Proposed Action required drainage infrastructure (e.g., berms, channels) to reduce flows and ensure that flooding near the Moapa Paiute Travel Plaza and the undercrossing of Valley of Fire Road near the plaza does not occur. The mowing alternatives would reduce flow rates compared to the Proposed Action, "because the facility would be constructed to leave the vegetation in place under the solar arrays..." Off-site flow rates are anticipated to be</p>

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						the same for the All Mowing Alternative, but could increase in the California Wash by approximately 500 cfs (14 cms) for the Proposed Action and approximately 320 cfs (9 cms) for the Hybrid Alternative . As stated in the Drainage Study, on pages 20 to 21, "The flows would continue in these small washes until they converge into the West Tributary of the California Wash approximately one mile to the north of the project boundary on the Moapa River Indian Reservation. From here, the main branch of the California Wash flows north to the Muddy River approximately 13 miles further north, crossing under the I-15 approximately six miles north of the project boundary. Increased flow (of up to 500 cfs) from development of the site is expected to have a negligible effect on downstream washes due to the total size of the California Wash watershed, which increases substantially downstream of the project to tens of thousands of cfs." Human health and safety would not be impacted as the nearest residences on the tribal land are more than 13 miles (21 kilometers) away. Increases in flows from the Project would not be so substantial as to impact residential areas on the Moapa River Indian Reservation. The Moapa Paiute Travel Plaza would not be impacted by flooding caused by the Project, as analyzed in the Draft RMPA/EIS. Refer to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust for more information on hydrologic impacts.
A10-11	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Acoustics	The Tribe disagrees with BLM that there are no "sensitive receptors" near the Project site. See pp. 3-119 to -120. The Tribe's ceremonial and pow wow grounds, located south of the Tribe's Travel Plaza, are close to the Project site. BLM fails to analyze noise impacts to ceremonial activities occurring on those grounds. Additionally, as noted above, the project is proposed to be on lands that have been and continued to be important to the Tribe in multiple ways.	The use of the green space south of the Moapa Paiute Travel Plaza has been added as a noise-sensitive receptor to Section 3.11: Acoustics of the Final RMPA/EIS. The green space is 2,080 feet (634 meters) away from the closest boundary of the Project. As stated on page 3-120 of the Draft RMPA/EIS "Noise levels from the loudest construction activity (site preparation) would dissipate to 55 dBA Leq (the USEPA acceptable noise limit for limited outdoor activity) at approximately 1,350 feet (411 meters) from the noise source." Noise levels from construction of the Proposed Action or action alternatives would not adversely impact any pow wows or ceremonies. The green space and travel plaza currently experience a high baseline level of noise from existing truck traffic and I-15. In order to minimize traffic conflicts, MM TRA-1 has been modified to include coordinating construction activities with tribal events and pow wows, to minimize conflicts. The importance of the lands to tribes is noted and was discussed in Section 3.13: Native American Concerns of the Draft RMPA/EIS (updated to Section 3.13: Native American Religious Concerns in the Final RMPA/EIS), on page 3-133, where it stated, "The Southern Paiute have used the Project area for thousands of years; the region is of great cultural significance, as they believe their Creator gave these lands to them."
A10-12	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Threatened, Endangered, and Candidate Species	BLM predicts staggering impacts to desert tortoise from Project construction under all action alternatives and admits that mitigation may not be sufficient to bring those impacts into an acceptable range. The Tribe has set aside thousands of acres within the Reservation for desert tortoise mitigation of projects within the Reservation, which effectively places those lands offlimits to further development. The Tribe is concerned that severe impacts to desert tortoise populations near the Project site will have indirect impacts to the Tribe if the Reservation's desert tortoise population takes on greater importance for tortoise preservation and recovery.	The Proposed Action would have significant adverse effects on desert tortoise, as was noted in the Draft RMPA/EIS on page 3-82, and as described in Master Response 2: Mojave Desert Tortoise . The mowing alternatives would allow for potentially reduced effects if tortoise successfully reoccupy the mowed areas of the Project site. The Project would have no effects on the Tribe's tortoise mitigation projects, nor would it result in any changes in the requirements on those mitigation projects on tribal lands. Any project within the Northeast Recovery Unit that impacts desert tortoise would increase pressure on desert tortoise and increase the need for preservation. Any project that the Tribe would undertake,

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						however, would be subject to the same provisions of the ESA and the Desert Tortoise Recovery Plan as the Gemini Project. Compliance for any future tribal project would be determined at the time of application, in accordance with law, and would depend on the conditions of the site, the proposed development, the proposed mitigation, and the conditions of tortoise at the time of application among other considerations.
A10-13	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Cumulative	Such impacts could further limit development within the Reservation, which is an environmental justice issue. Thus, the Tribe is opposed to any project that will force the Tribe to bear the burden of tortoise habitat preservation on its Reservation without any concomitant increase in land available to the Tribe to further its own economic development.	<p>Refer to Response to Comment A10-12 for a discussion of how the Project would not directly or indirectly impact desert tortoise mitigation projects on the Moapa River Indian Reservation, nor would it result in any changes in the requirements on those mitigation projects that could have socioeconomic impacts on the tribe.</p> <p>No other adverse direct or indirect effects (e.g., flooding, fugitive dust) from implementation of the Project would occur to the Moapa River Indian Reservation that could preclude development of tribal lands (refer to the RMPA/EIS analyses for further information). Environmental justice was analyzed in the context of NEPA in Section 3.15: Socioeconomics and Environmental Justice. The population on the Moapa River Indian Reservation is the only minority and low-income population within 33 miles (52 kilometers) of the Project area. The analysis found that adverse ecological, cultural, human health, economic, or social impacts are not anticipated to be disproportionately higher on the Moapa River Indian Reservation population. The Project is generally located more than 15 miles (24 kilometers) from the Reservation population and is not visible from the Reservation. The Project would alter an area of natural habitat; however, adverse effects on sensitive species would be minimized and mitigated to the extent possible. Economic impacts would be beneficial in the form of construction jobs; additionally, workers are likely to use the Moapa Paiute Travel Plaza to purchase food, daily supplies, and fuel, which would boost income of the Moapa Band of Paiutes.</p>
A10-14	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Analysis Methods and Data	<p>The Tribe continues to wonder at BLM's insistence that "Native American Concerns" are somehow limited to culturally-important plants and animals, and archaeological sites. See Section 3.13. As the Tribe has explained to BLM in other NEPA processes, the Tribe also has interests as a landowner and sovereign sharing a boundary with BLM lands, and has concerns about impacts on Tribal economic development plans and impacts on Tribal government operations and finances.</p> <p>Impacts to tribal interests are clearly encompassed within the definition of "effects" at 40 C.F.R. § 1508.8, and should be analyzed as cumulative impacts (40 C.F.R. § 1508.7) significantly (40 C.F.R. § 1508.27) affecting tribal economic and social interests as part of the "human environment," 40 C.F.R. § 1508.14. Very little consideration is given to spillover effects from the Project that will directly impact Tribal lands and Tribal interests. In fact, the entire "Native American Concerns" section of the Draft RMP A/EIS is 5 pages. Almost three times as many pages are devoted to discussing concerns related to the Old Spanish Trail.</p>	<p>The analysis presented in Section 3.13: Native American Concerns in the Draft RMPA/EIS is primarily focused on religious and cultural concerns, in accordance with Appendix 1 of the BLM NEPA Handbook H-1780-1, which identifies Native American Religious Concerns as a supplemental authority under the American Indian Religious Freedom Act of 1978 (42 USC1996). The title of the section has been revised to match the supplemental authority of "Native American Religious Concerns." Native American and tribal concerns are also considered through the Section 106 consultation process.</p> <p>Socioeconomic impacts were addressed in the context of NEPA in Section 3.15: Socioeconomics and Environmental Justice. While the BLM understands that the Moapa River Indian Tribe has additional concerns pertaining to their own economic development, NEPA requires an analysis of the direct and indirect socioeconomic costs and benefits of a project on surrounding communities. Industry-standard modeling methods were undertaken to assess the direct, indirect, and induced impacts of the Project on the surrounding communities. The modeling showed the Project to have positive effects on the regional economy, including creation of construction jobs that would be available to the Tribal members and increased patronage to the Tribal Plaza shop and restaurant. The Project would not result in degradation of tribal lands nor any increased costs to tribal government or</p>

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						finances as it would not result in the need for additional tribal public services or housing (see page 3-156 of the Draft RMPA/EIS). "Spillover" effects are not anticipated since many mitigations and requirements would be in place to ensure that environmental impacts do not occur off-site, such as dust impacts, hydrologic impacts, or traffic impacts. The socioeconomic and environmental justice analysis addressed cumulative impacts on page 3-158 of the Draft RMPA/EIS. Adverse cumulative impacts to socioeconomics or environmental justice are not anticipated.
A10-15	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Socioeconomics and Environmental Justice	BLM failed to look at unemployment within the Moapa Reservation. The Tribe continually struggles to find ways of securing Tribal member employment on projects located next to the Reservation. These projects would be a great source of employment for Tribal members. The Tribe applies its Tribal Employment Rights Ordinance to all contractors within the Reservation yet application off Reservation requires the willingness of project developers, prime contractors and unions. BLM states that " [t]he small influx of workers would not displace [the] minority and low-income population [on the Reservation], as worker influx is expected to be into Las Vegas." Seep. 3-157. However, this ignores the fact that project developers are under no obligation to hire Tribal members.	The comment regarding the lack of legal requirement for project developers to use Native American workers is noted. The Draft RMPA/EIS acknowledges that it is unknown where the construction workforce could come from, but due to unemployment in Clark County and Las Vegas, and quantity of construction workers, it is likely that some or all of the work force would be accommodated locally (page 3-156 of the Draft RMPA/EIS). The analysis acknowledges that "Native Americans are expected to comprise part of the workforce needed during construction" (page 3-156 of the Draft RMPA/EIS). The Project would either have a neutral or beneficial impact on the minority and low-income population of Native Americans on the Moapa River Indian Reservation in regard to employment and economics. The quoted sentence of "The small influx of workers would not displace this minority and low-income population, as worker influx is expected to be into Las Vegas" is in reference to the portion of the construction workforce that is not local and that housing for these workers would be provided in Las Vegas due to the huge availability of short-term housing options. The availability of housing on the Moapa River Indian Reservation would not be changed in a way that could adversely affect the Native American population. The Draft RMPA/EIS does not include requirements to hire tribal members during the construction of the facility, but this requirement could come out of the Section 106 consultation and further negotiations with the applicant.
A10-16	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Cumulative	We disagree with BLM that "[t]he Project would not contribute to a potentially substantial cumulative effect" on the Tribe's Reservation. BLM has failed to analyze any economic impacts beyond those associated with potentially increased employment opportunities.	Other socioeconomic impacts to the tribe (beyond jobs) are not anticipated. Refer to the Response to Comment A10-14 for why other socioeconomic impacts are not anticipated, including to housing or public services. The Project would not impact the Tribe's development plans as it would not be on tribal land nor use tribal resources, unless under agreement with the Tribe (such as for water).
A10-17	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Socioeconomics and Environmental Justice	For decades, the Tribe's main revenue has come from its Travel Plaza, which is adjacent to the I-15 Valley of Fire exit ramps. Valley of Fire Road, and project site. Because the Tribe's Travel Plaza relies exclusively on I-15 travelers for its business, any traffic impacts that make it more difficult to travelers to access the Travel Plaza are extremely problematic for the Tribe. The road should, at a minimum, be widened to accommodate increased construction traffic.	The impact of temporary construction traffic on highways and roads along the construction route, were analyzed in Section 3.16: Transportation of the Draft RMPA/EIS. The capacity of I-15 at the Valley of Fire on- and off-ramps is 1,440 vehicles an hour and the capacity of Valley of Fire Road is 5,000 vehicles daily (Table 3.16-1). In accordance with the analysis, the temporary construction traffic would not result in an exceedance of the capacity for Valley of Fire Road, even during the peak construction period. Operational traffic would be minimal. No changes to Valley of Fire Road are required to accommodate Project-related traffic. The Moapa Paiute Travel Plaza will likely see greatly increased patronage by the construction teams over the 2.5-year construction period, given it provides the only food, services, and provisions available for miles. This increase in business should have a positive impact on tribal revenues.

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A10-18	10/10/2019	Simmons, Vickie	Moapa Band of Paiute Indians	Consultation, Coordination, and Public Involvement	The Tribe appreciates the opportunity to provide comments on the Draft RMPA/EIS. We remind BLM that, under its own consultation policy, tribal information must be treated as a necessary factor in defining the range of acceptable public-land management options, and BLM must create and maintain a permanent record to show how tribal information was used in the BLM' s decision-making process. Those principles apply to this RMPA/EIS process.	The BLM conducted government-to-government consultations over several months prior to release of the Draft RMPA/EIS, pursuant to Section 106 of the NHPA, expanding on larger efforts undertaken by BLM to consult on renewable energy projects in southern Nevada. Consultation with the Moapa Band of Paiutes in regard to this Project will continue until the conclusion of the Section 106 process. The outcome of the ongoing consultation is entered into the record for the Project.
B1-1	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	BLM Management	Comment: The Gemini solar project application is considered by BLM to be “grandfathered” and not subject to the provisions of the Programmatic Solar Energy Development Plan for Six Southwestern States because the earlier date of the application. It is, however, subject to the provisions of the LVRMP. Renewable energy development was not addressed in the LVRMP, so the overarching guidance relative to any land use, including considering granting rights of way for renewable energy development, is protection of the desert tortoise and its habitat with the goal of recovering the species.	Renewable energy development was not specifically addressed in the 1998 Las Vegas RMP; however, in accordance with FLPMA, public lands are to be managed for multiple uses that consider the long-term needs of future generations for renewable and non-renewable resources (as was stated on page 1-1 of the Draft RMPA/EIS). This section of the Draft RMPA/EIS also states that "The BLM is authorized to grant ROWs on public lands for systems of generation, transmission, and distribution of electrical energy (Section 501[a][4] and 43 CFR 2800). Taking into account the BLM's multiple-use mandate, the BLM’s purpose and need for this action is to respond to the ROW application submitted by the Applicant under Title V of FLPMA (43 USC § 1761) (serial number N-84631) to construct, operate, maintain, and decommission the Project in compliance with FLPMA, BLM ROW regulations, the BLM NEPA Handbook, Department of the Interior (DOI) NEPA regulations, and other applicable federal and state laws and policies." The 1998 Las Vegas RMP does not preclude development of renewable energy projects through the FLPMA ROW process.
B1-2	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Threatened, Endangered, and Candidate Species	BLM stated that the highest priority in the LVRMP is the implementation of the goals and objectives of the 1994 Desert Tortoise Recovery Plan, and that functional corridors or habitat linkages connecting Areas of Critical Environmental Concern would be maintained. The proposed project is located in a priority habitat linkage for the desert tortoise with very high quality habitat and desert tortoise densities that are among the highest in the Northeastern Recovery Unit, as well as all other recovery units throughout the range of the species. The U.S. Fish and Wildlife Service recommended to BLM that renewable energy projects should not be located within priority habitat linkages, which it identified on maps submitted to BLM in is comments on the Programmatic Solar Development Plan for Six Southwestern States.	The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The priority linkages and impacts to desert tortoise connectivity, including in relation to ACECS, are explained in Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow). The Project does not provide a habitat linkage connecting the existing CHUs and ACECs. The Draft RMPA/EIS identified that the Project has high-quality habitat and high desert tortoise densities, consistent with the commenter's assertion, and explained in Master Response 2: Mojave Desert Tortoise (under Desert Tortoise Habitat and Densities). Consultation with the USFWS under Section 7 of the ESA process has been ongoing, as the Project requires a Biological Opinion before it can proceed. The consultation is specific to this Project. The USFWS and BLM understand that impacts under the Proposed Action would result in significant adverse effects on desert tortoise and connectivity. These adverse effects were disclosed in the Draft RMPA/EIS for the decision-maker. Concerns expressed during the consultation resulted in the development of alternatives that included mowing of the site to allow for tortoises to reoccupy the development areas. The alternative reduces impacts to connectivity, with successful reoccupation, as compared with traditional development methods. Mowing to allow reoccupation of solar facilities was not addressed in the Programmatic Solar Development Plan for the Six Southwestern States. Consultation is ongoing for this Project, as the USFWS will need to issue a Biological Opinion that includes protection measures. The USFWS has the authority to determine the acceptable

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B1-3	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Threatened, Endangered, and Candidate Species	<p>Based on a GIS analysis of habitat suitability within the proposed project area, Defenders has calculated that the individual units comprising the proposed project have an average suitability rating of 0.67 on a scale of 0 to 1.0. For comparison, we also calculated that the Coyote Springs ACEC has an average habitat suitability rating of 0.66 and the Piute-Eldorado ACEC averages 0.51. Thus, the proposed Gemini solar project is located on habitat having a higher suitability rating than these two ACECs which were designated for conservation of the desert tortoise and its habitat in the</p> <p>1998 LVRMP. A copy of our habitat suitability map of the project area is attached. Given the above, in addition to Section 7 provisions of the federal Endangered Species Act, FLPMA and BLM’s policy for management of special status species (Manual 6840), the only alternative that aligns with these land use and management directives is the No Action</p> <p>Alternative under which BLM would not authorize the project, not amend the LVRMP and would continue to manage public lands in the area in a manner consistent with the LVRMP.</p>	The BA, included as an appendix to the Final RMPA/EIS, identifies the habitat for desert tortoise as high-quality and with high densities of tortoise known present, as explained in Master Response 2: Mojave Desert Tortoise (under Desert Tortoise Habitat and Densities). The commenter's preference for the No Action Alternative is acknowledged.
B1-4	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Threatened, Endangered, and Candidate Species	<p>Comment: The alternatives to the proposed project that would lessen impact to vegetation in varying amounts using mowing as opposed to complete removal would, in theory, allow desert tortoises to be returned to the site and freely move across the landscape. These alternatives have not been proven compatible with maintaining a viable desert tortoise population due to reduced canopy coverage, repeated use of motorized mowing equipment and vehicles throughout the proposed solar project area. As such, they are not appropriate for such a large scale, intensive land use as a PV solar energy generation project.</p>	<p>The Draft RMPA/EIS recognized the potential for impacts to desert tortoise, even in mowed areas, as described in Master Response 2: Mojave Desert Tortoise (under Scientific Study). From the Draft RMPA/EIS, "the purpose of mowing under this alternative is to maintain vegetation and soils within the solar facility so that the desert tortoises would have the opportunity to return to the site once construction is completed (recognizing that the habitat on the Project site would be substantially altered)."</p> <p>The Draft RMPA/EIS also acknowledged the uncertainty in method of allowing tortoise back into the solar field, as identified in the discussion of residual effects of the All Mowing Alternative, where it states "Desert tortoise habitat over the entire solar facility acreage of 7,115 [acres] (2,879 hectares) would be eliminated, but tortoises could reoccupy the site when vegetation returns. However, it is not known whether reoccupation would be successful." The Draft RMPA/EIS adequately disclosed the impacts. During operations and maintenance, vegetation under solar arrays would be cut or trimmed by hand in off-road areas. Motorized mowing equipment would not be used once tortoise are introduced back into the solar facility. Trimming would only occur with hand tools that can be mechanical or motorized. Clarifications have been made throughout the Final RMPA/EIS. On-going operations and maintenance is described further in Master Response 2: Mojave Desert Tortoise.</p>
B1-5	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Alternatives	<p>We recommend that BLM develop additional alternatives that include reducing the footprint of the proposed project to actually avoid or minimize impacts to sensitive biological resources, and especially the threatened desert tortoise.</p>	<p>A reduced footprint alternative was not considered as impacts to desert tortoise were reduced through the mowing alternatives, provided successful reoccupation by desert tortoise. Refer to Master Response 1: Alternatives for information on the alternatives considered, including why a reduced footprint alternative was not carried forward for full analysis.</p> <p>The Draft RMPA/EIS covered approximately 7,100 acres (2,873 hectares) of impacts. MM WILD-1 in Appendix H requires reducing the Project footprint to the minimum needed for 690-MW of solar development. The measures states that, "the Applicant shall provide a revised Project footprint based on additional engineering design that shall be reviewed and approved by the BLM prior to issuance of a Notice to Proceed for construction. All disturbance areas shall be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads.</p>

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						Justifications for disturbances, such as access road widths, substrates, locations, and frequency, shall be provided upon BLM request during review of the revised footprint."
B1-6	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Alternatives	The project proposed by the applicant and in each of BLM's alternatives in the DEIS are essentially the same, which does not reflect a reasonable range as required by the National Environmental Policy Act (NEPA). This indicates that BLM has designed alternatives that meet the desire of the project applicant.	<p>The BLM's purpose and need help to shape the range of alternatives. While the total acreage of each alternative carried forward for analysis is approximately the same, the methods of construction differ considerably and respond to different resource constraints. NEPA does not require a reduced project footprint alternative (40 CFR 1502.14). The BLM prepared an Alternatives Report, which explained how the agency developed alternatives and determined which were reasonable and would be carried through for full analysis. The Alternatives Report was incorporated by reference into the Draft RMPA/EIS and was available on the ePlanning website. Section 4 of the Alternatives Report identifies the alternatives considered but rejected. Rejected alternatives included other on-site alternatives, alternative configurations, addition of an energy corridor, and several off-site options. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch. The alternatives and the alternatives development process complied with NEPA.</p> <p>The BLM will ultimately determine whether to grant the ROW, deny the ROW, or approve the ROW with modifications, and those modifications could include a reduced acreage footprint. Refer to Master Response 1: Alternatives, which provides additional information on the alternatives' evaluation process.</p>
B1-7	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Alternatives	Comment: The range of alternatives in the DEIS for the Gemini solar project suffer from the same legal flaw in the BLM's West Mojave route designation FEIS – they are all based on a 7,100 acre project that differs only in intensity of impact to soil and plant communities by using vegetation mowing rather than complete removal of vegetation through blading and plowing. Section 1500.2 (Policy) of the CEQ Regulations states that “Federal agencies shall to the fullest extent possible: ...Use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment.”	<p>Refer to Master Response 1: Alternatives for additional information on the alternatives that were considered and excluded from the analysis.</p> <p>The BLM will ultimately determine whether to grant the ROW, deny the ROW, or approve the ROW with modifications, and those modifications could include a reduced acreage footprint or other modifications to reduce resource impacts.</p>
B1-8	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	BLM Management	Comment: BLM appears to have taken an overly narrow approach in justifying the purpose and need for the project. First, it emphasizes its multiple-use mandate, but fails to include that the Federal Land Policy and Management Act (FLPMA) also requires that public lands be managed “...on the basis of multiple use and sustained yield” and in a manner that “...will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.”	The purpose and need as stated is consistent with BLM practice. Refer to Master Response 1: Alternatives (under Purpose and Need) for an explanation as to the adequacy of the stated purpose and need for the RMPA/EIS.
B1-9	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	BLM Management	It is critically important that BLM recognize and adhere to its full legal obligations under FLPMA in justifying the purpose and need for the project, and in identifying and analyzing alternatives to the proposed project. The presence and abundance of the threatened desert tortoise within the footprint of the project, and its location within a priority habitat linkage identified by the U.S. Fish and Wildlife Service, heightens the need for BLM to completely and accurately describe its responsibility for public land management under FLPMA, and its responsibility under Section 7(a)(1) of the federal Endangered Species Act to “...utilize (its) authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act.”	Refer to Master Response 1: Alternatives regarding BLM's purpose and need. Refer to Master Response 2: Mojave Desert Tortoise for a discussion of desert tortoise habitat and connectivity, and the Section 7 of the federal ESA consultation underway with the USFWS on the Project.

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B1-10	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Threatened, Endangered, and Candidate Species	<p>Comment: The significance of the desert tortoise population within the project area needs to be better defined relative to its abundance and how the project would impact recovery of the species given that the DEIS states, “The average density of adult desert tortoises in the Proposed Action area is 18.6 per square mile (7.2 per square kilometer), for the All Mowing Alternative is 22.8 per square mile (8.8 per square kilometer), and</p> <p>for the Hybrid Alternative is 19.9 per square mile (7.7 per square kilometer).”</p>	<p>The Draft RMPA/EIS and Biological Assessment describe how, of the studies completed, the Project site contains the highest density of tortoises known on BLM land in the Southern Nevada District Office territory. Tortoise densities are not uniform across tortoise range or across time. Density estimates of tortoises vary among tortoise recovery units and years. There are potentially other areas that contain a high density of tortoises, as well as areas with low tortoise densities. Desert tortoise densities are also described in Master Response 2: Mojave Desert Tortoise (under Desert Tortoise Habitat and Densities).</p> <p>Additional supporting information that elaborates on the analysis of the Hybrid Alternative presented in the Final RMPA/EIS is provided in the Biological Assessment, which is included as an appendix to the Final RMPA/EIS. Section 6.2 of the Biological Assessment makes the finding that "Implementation of the Project “may affect and is likely to adversely affect” the desert tortoise in the Action Area. However, the Project would not jeopardize the continued survival or future recovery of the desert tortoise." The Biological Assessment is the appropriate document for determinations on tortoise recovery.</p> <p>Section 6.2 of the Biological Assessment also states that, "The implementation of design features and minimization measures cited in this BA would not reduce impacts to desert tortoise to negligible levels. Avoidance of all potentially suitable habitat for this species is not a feasible means of minimizing impacts due to the location of the Project site within suitable desert tortoise habitat. However, the desert tortoise reintroduction within 65 percent (4,390 acres [1,777 hectares]; mowed area) of the Project area would potentially offset the impacts. The overall direct and indirect impact on desert tortoise habitat from construction, operation and maintenance, and decommissioning of the Project (7,113 acres [2,879 hectares]) would impact 0.14 percent of the of the 4.85 million acres (1.96 million hectares) of potentially suitable habitat available for this species in the NMRU (USFWS, 2010). Of the 7,038-acre (2,853-hectare) solar field, vegetation would be mowed to no less than 18 to 24 inches (46 to 61 centimeters) and desert tortoise would be reintroduced within 4,390 acres (1,777 hectares)."</p>
B1-11	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Threatened, Endangered, and Candidate Species	<p>Comment: BLM should identify and analyze alternatives to the proposed project based on desert tortoise occurrence and density within the areas identified in Table 3.8-1 Desert Tortoise Survey Areas and Results and Population Density Estimates.</p>	<p>The alternatives configurations were developed based on desert tortoise occurrence and density, but also with consideration for other environmental resources, as explained in Master Response 1: Alternatives, including the State of Nevada Critically Endangered/Fully Protected threecorner milkvetch The areas of mowing were developed with consideration for the densities of tortoise in the Hybrid Alternative, by designating a connected area of the highest density tortoise occurrence and the highest quality habitat within the development area for mowing.</p>
B1-12	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Alternatives	<p>Obvious alternatives that need to be analyzed include utilizing Alternative Development Area F (1,832 acres with no desert tortoises), and Proposed Development Area D (1,913 acres with 20 desert tortoises). Considering that a properly designed PV solar facility generates approximately 1 MW/7 acres, a project limited to Development Area F would generate a total of approximately 262 MW, and a project located within Development Area D would generate a total of approximately 273 MW. Combined, limiting the solar project to these two areas would generate approximately 535 MW, an amount that is approximately 78% of the applicant’s goals. However, we caution BLM to avoid consideration and analysis of</p>	<p>Refer to Master Response 1: Alternatives for the reasons why development area F was excluded from the alternatives. Desert tortoise and threecorner milkvetch have an inverse relationship for habitat suitability. Desert tortoise is found where threecorner milkvetch is not, and threecorner milkvetch is found where desert tortoise is not. The alternatives were developed to balance impacts to these resources.</p>

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					alternatives that align only with the applicant's goal of developing and operating a project that would generate approximately 690 MW, as it has done in the DEIS.	<p>The ROW application is for a 690-MW project. A smaller project was not considered as impacts were reduced through different construction methodologies. Refer to Master Response 1: Alternatives for additional explanation of the alternatives considered.</p> <p>Additionally, MM WILD-1 in Appendix H requires reducing the Project footprint to the minimum needed for 690-MW of solar development. The measures states that, "the Applicant shall provide a revised Project footprint based on additional engineering design that shall be reviewed and approved by the BLM prior to issuance of a Notice to Proceed for construction. All disturbance areas shall be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads. Justifications for disturbances, such as access road widths, substrates, locations, and frequency, shall be provided upon BLM request during review of the revised footprint." If the standard for development is 1-MW per 7 acres (2.8 hectares), then the Project would only occupy around 5,000 acres (2,023 hectares). The Draft and Final RMPA/EIS assess the full 7,100 acres (2,873 hectares) as a maximum.</p>
B1-13	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Threatened, Endangered, and Candidate Species	Impacts of the proposed project on desert tortoises are substantial.	<p>This statement is consistent with the conclusions of the Draft RMPA/EIS for the Proposed Action, as also explained further in Master Response 2: Mojave Desert Tortoise.</p> <p>The discussion of residual effects for the All Mowing Alternative and Hybrid Alternative identify that impacts could potentially be reduced as compared with the Proposed Action. Desert tortoise habitat would be eliminated but tortoise could reoccupy the development areas; however, it is not known if reoccupation would be successful.</p>
B1-14	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Threatened, Endangered, and Candidate Species	Comment: There is no justification for this project that outweighs the importance of the desert tortoise, its habitat and BLM's obligations to use its full authority to take actions that will contribute to the recovery of this threatened species. It is clear the habitat and desert tortoise population is important for recovery of the species, and reinforced by the U.S. Fish and Wildlife Service its comments to BLM on the Programmatic Solar Energy Development Plan for Six Southwestern States:	Refer to Master Response 2: Mojave Desert Tortoise regarding consultation with the USFWS specific to this project under the mandated Section 7 of the ESA process, versus broad comments made by the USFWS on the Programmatic Solar Energy Development Plan for the Six Southwestern States. The commenter's opinion that preservation of desert tortoise outweighs any other benefits of the Project is noted. The BLM must consider the findings of the entire RMPA/EIS when making a decision on the ROW process.
B1-15	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Threatened, Endangered, and Candidate Species	Comment: The lack of available desert translocation sites further supports the No Project Alternative.	The Draft RMPA/EIS identifies that desert tortoise translocation sites are not available in the recovery unit. The mowing alternatives were developed to allow for tortoise reoccupation of the solar facility since long-distance translocation is not an option. The different translocation methods and impacts of each method are described in the Draft RMPA/EIS and explained further in Master Response 2: Mojave Desert Tortoise (under Tortoise Translocation).
B1-16	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Threatened, Endangered, and Candidate Species	Furthermore, the alternatives that include mowing vegetation to varying degrees and returning desert tortoises to the project area during its operational life is an untested proposal that has not been tested through research, which is inappropriate over such a large project area and involving a threatened species protected under the federal Endangered Species Act.	The Draft RMPA/EIS recognized the potential for impacts to desert tortoise, even in mowed areas, as described in Master Response 2: Mojave Desert Tortoise (under Scientific Study). From the Draft RMPA/EIS, "the purpose of mowing under this alternative is to maintain vegetation and soils within the solar facility so that the desert tortoises would have the opportunity to return to the site once construction is completed (recognizing that the habitat on the Project site would be substantially altered)."

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						<p>The Draft RMPA/EIS also acknowledged the uncertainty in method of allowing tortoise back into the solar field, as identified in the discussion of residual effects of the All Mowing Alternative, where it states "Desert tortoise habitat over the entire solar facility acreage of 7,115 (2,879 hectares) would be eliminated, but tortoises could reoccupy the site when vegetation returns. However, it is not known whether reoccupation would be successful." The Draft RMPA/EIS adequately disclosed the impacts. During operations and maintenance, vegetation under solar arrays would be cut or trimmed by hand in off-road areas. The ISEGS solar facility may represent an example of constantly pruned habitat that is highly altered but has regrown substantially after initial construction (NRG Energy Services 2018).</p> <p>Motorized mowing equipment would not be used once tortoise are introduced back into the solar facility. Trimming would only occur with hand tools that can be mechanical or motorized. Clarifications have been made throughout the Final RMPA/EIS. On-going operations and maintenance is described further in Master Response 2: Mojave Desert Tortoise.</p>
B1-17	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	BLM Management	5. Conclusion: Based on the above comments, Defenders of Wildlife considers the No Action Alternative the one most aligned with the provisions and the ROD of the 1998 LVRMP, the FLPMA, BLM Policy Manual 6840, and Section 7(a)(1) of the Endangered Species Act.	The commenter's preference for the No Action Alternative is acknowledged.
B1-18	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Alternatives	In its current form, the DEIS is deficient in that it lacks a range of reasonable alternative to the proposed action,	The Draft RMPA/EIS and the Alternatives Report, incorporated into the Draft RMPA/EIS by reference, demonstrated the process for evaluation of alternatives which complies with NEPA. Refer to Master Response 1: Alternatives for a discussion of NEPA Alternatives requirements and the range of alternatives considered for the Project.
B1-19	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	Threatened, Endangered, and Candidate Species	is highly speculative regarding likelihood that the solar project area could support desert tortoises during the 30 year life of the project requiring motorized vehicle use associated with repeated vegetation mowing, photovoltaic panel washing and general maintenance activities.	On-going operations and maintenance is described further in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance). Motorized mowing equipment would not be used once tortoise are introduced back into the solar facility. Trimming would only occur with hand tools that can be mechanical or motorized. Clarifications have been made throughout the Final RMPA/EIS. Panel cleaning would occur by manual methods using brushes and air or using robotic systems, or if water is used no excess water would drip off of the panels and the cleaning system would be integrated into or attached to the panels. A biological monitor would also be present during panel cleaning and vegetation trimming. Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) also clarifies that Biological Assessment also requires that biological monitors be present during ground-disturbing and/or off-road vehicle or equipment operations and maintenance activities outside of the fenced solar facility or within mowed areas to ensure that no tortoises are in harm's way.
B1-20	9/4/2019	Aardahl, Jeff	Defenders of Wildlife	NEPA and Decision Process	We do not consider the DEIS legally sufficient, and deficiencies identified in our comments should be corrected and included in the FEIS for the proposed project. This may require BLM to prepare a supplemental DEIS for public review and comment before proceeding to a FEIS.	The comments have been considered in this report. There are no changes to the analysis that require the release of a supplemental EIS. Refer to the Responses to Comments B1-1 through B1-19.
B2-1	8/29/2019	Andre, James M.	Granite Mountains Desert	BLM Management	Please select a No Action Alternative for the Gemini Solar Project and designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.	The commenter's preference for the No Action Alternative is acknowledged.

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			Research Center			
B2-2	8/29/2019	Andre, James M.	Granite Mountains Desert Research Center	Threatened, Endangered, and Candidate Species	Approval of the project would result in the removal of over 7,100 acres or 11 square miles of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its range. It may need to be up-listed to Endangered status with the cumulative developments happening on its habitat.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for an explanation of how the Draft RMPA/EIS addressed the loss of habitat and impacts to desert tortoise. The desert tortoise is identified as a federally threatened species, as indicated on page 3-80 of the Draft RMPA/EIS, which states, "The only federally threatened, endangered, or candidate species known or with potential to occur in the Project area is the Mojave Desert tortoise." The Biological Assessment, provided as an appendix to the Final RMPA/EIS, provides supplemental information on the species and its impacts, building off of the summary provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) regarding consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action.
B2-3	8/29/2019	Andre, James M.	Granite Mountains Desert Research Center	Threatened, Endangered, and Candidate Species	Vegetation mowing as proposed for this project is a purely experimental action, as there have been no peer reviewed studies that show long-term success.	The comment is acknowledged. Long-term monitoring and study will be a requirement of the Section 7 consultation and Biological Opinion, and as described in Master Response 2: Mojave Desert Tortoise (under Mowing, as a New, Unproven Method), including the requirements for detailed monitoring plots and methods.
B2-4	8/29/2019	Andre, James M.	Granite Mountains Desert Research Center	Threatened, Endangered, and Candidate Species	However, clearly with vegetation mowing burrowing animals would be killed and deafened. Many of the estimated 900 juvenile desert tortoises would be missed and killed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
B2-5	8/29/2019	Andre, James M.	Granite Mountains Desert Research Center	Vegetation and Jurisdictional Waters	Biological soil crusts would be destroyed.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan.
B2-6	8/29/2019	Andre, James M.	Granite Mountains Desert Research Center	Vegetation and Jurisdictional Waters	Invasive plants will likely colonized the mowed areas.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how weed spread was addressed in the Draft RMPA/EIS and the measure to reduce spread.
B2-7	8/29/2019	Andre, James M.	Granite Mountains Desert Research Center	Threatened, Endangered, and Candidate Species	Tortoises would be allowed to re-enter the site. Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for a discussion of operations and maintenance activities that would occur, the intensity and frequency, and the protections required to minimize effects on desert tortoise. The Biological Opinion will also outline measures to reduce the risk to tortoises on the Project site.
B2-8	8/29/2019	Andre, James M.	Granite Mountains Desert	Threatened, Endangered, and Candidate Species	Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and innate conditions, as opposed to external factors (Nussear et al, 2007), such

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			Research Center			as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known.
B2-9	8/29/2019	Andre, James M.	Granite Mountains Desert Research Center	Vegetation and Jurisdictional Waters	The project would remove 700 acres of the habitat for Threecorner milkvetch, one of Nevada's rarest plants, and will impact more than a dozen other rare plant species.	<p>The Draft RMPA/EIS addresses impacts to the threecorner milkvetch from the Proposed Action as well as the All Mowing Alternative and the Hybrid Alternative, as summarized in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities. Mitigation measures were identified but even with mitigation, direct impacts on occurrences and habitat of threecorner milkvetch would be adverse.</p> <p>Impacts to modeled threecorner milkvetch habitat are also explained in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities. Measures included in MM VG-2, as presented in Appendix H reduce effects and include using only drive and crush in modeled threecorner milkvetch habitat in order to keep soils and likely seed banks intact.</p> <p>The Project would not impact more than a dozen other rare plant species. As described on page 3-44 of the Draft RMPA/EIS, three taxa of special status plants, threecorner milkvetch, Nye milkvetch, and rosy two-tone beardtongue, were positively identified within the study area during the Spring 2018 special status plant inventory. As detailed in Appendix A of the Botanical Resources Report, Gold Butte moss is the only other special-status plant species that has a moderate-high potential to occur within the Project area, although none were observed during the special-status plant inventory. All other special-status plant species have a low or low-medium potential to occur.</p>
B2-10	8/29/2019	Andre, James M.	Granite Mountains Desert Research Center	Vegetation and Jurisdictional Waters	The project site lies on one of the most undisturbed habitats in the Clark County. It contains biological soil crusts and thousands of native Mojave Desert vertebrates and invertebrate species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBCS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.
B2-11	8/29/2019	Andre, James M.	Granite Mountains Desert	Vegetation and Jurisdictional Waters	Rare microphyll woodland with catclaw acacia and desert willow will be destroyed. These groves of deep rooted desert trees harbor numerous bird species, and should be conserved, not shredded.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catclaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the

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			Research Center			Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in Section 3.7: Wildlife, Migratory Birds, and Special Status Species.
B2-12	8/29/2019	Andre, James M.	Granite Mountains Desert Research Center	Old Spanish National Historic Trail	The project would be built on part of the historic Old Spanish Trail. The massive build-out of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.	Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis, mitigation, and long-term impacts. The OSNHT in the Project area is considered a corridor that appears to span most of the valley in which the solar facility is located.
B2-13 and B2-14	8/29/2019	Andre, James M.	Granite Mountains Desert Research Center	Alternatives	Several thousand acres of land are being developed in the Las Vegas Valley for new housing. Solar energy development should be developed on rooftops and over parking lots, eliminating the need for costly transmission lines.	Refer to Master Response 1: Alternatives for information on why rooftop/distributed generation, including installation on new housing developments, was not considered as an alternative (see the responses to the related comments, below).
B3-1	9/5/2019	Belenky, Lisa T.	The Center for Biological Diversity	Alternatives	However, like any project, proposed solar power projects should be thoughtfully planned to minimize impacts to the environment.	A detailed alternatives screening process was undertaken for the Project, as provided in the Alternatives Report and Section 2.5 of the Draft RMPA/EIS. Refer to Master Response 1: Alternatives for additional information on the Alternatives process. The NEPA process also allows for the review and disclosure of impacts on the environment and the prescription of mitigation to reduce effects. The RMPA/EIS provides that analysis and is factored into the decision-making process.
B3-2	9/5/2019	Belenky, Lisa T.	The Center for Biological Diversity	Alternatives	In particular, renewable energy projects should avoid impacts to sensitive species and habitats, and should be sited in proximity to the areas of electricity end-use in order to reduce the need for extensive new transmission corridors and the efficiency loss associated with extended energy transmission.	Refer to Master Response 1: Alternatives for information on the alternatives screening process and the NEPA process used to understand, disclose, and reduce environmental impacts, as feasible. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length.
B3-3	9/5/2019	Belenky, Lisa T.	The Center for Biological Diversity	Alternatives	The Center provided scoping comments regarding this proposal on August 26, 2018, and those comments are incorporated herein by reference. Unfortunately, the DEIS fails to address several critical issues raised by the Center and other commenters and fails to consider a reasonable range of alternatives that could avoid impacts to resources.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA and the critical issues addressed in the Draft RMPA/EIS, which shaped the alternatives assessment.
B3-4	9/5/2019	Belenky, Lisa T.	The Center for Biological Diversity	Alternatives	The Center shares the concerns raised in comments submitted on this DEIS by Sierra Club and Desert Tortoise Council among others. Of particular concern is the DEIS' failure to accurately identify impacts to desert tortoise habitat and populations, to analyze those impacts, and to consider alternatives that would avoid those impacts including a reduced footprint alternative.	Impacts to desert tortoise were described in detail in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. The commenter has not provided sufficient detail as to what impacts they believe were not accurately identified and, therefore, a specific response cannot be provided. The detailed analysis of impacts on desert tortoise is supplemented with additional information in the Biological Assessment, which is included as an appendix to the Final RMPA/EIS. The RMPA/EIS and Biological Assessment provide a comprehensive analysis of impacts to habitat, to individual tortoises during project construction and operation, indirect impacts to populations and genetics from connectivity, from invasive species, dust, and noise, impacts to critical habitat, residual impacts, and cumulative impacts including a detailed quantification of impacts. The analysis identified numerous adverse impacts and several mitigation measures. It acknowledged significant adverse impacts from loss of habitat and individual, particularly under the Project. Two alternatives designed specifically to potentially reduce impacts to desert tortoise, should tortoise successfully reoccupy mowed areas of the solar field, were analyzed in

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						equal level of detail as the Proposed Action. Master Response 2: Mojave Desert Tortoise provides additional information on impacts to desert tortoise.
B3-5	9/5/2019	Belenky, Lisa T.	The Center for Biological Diversity	Threatened, Endangered, and Candidate Species	Failure to accurately identify and analyze impacts to desert tortoise habitat, individuals, and populations;	Impacts to desert tortoise were described in detail in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. The commenter has not provided sufficient detail as to what impacts they believe were not accurately identified and, therefore, a specific response cannot be provided.
B3-6	9/5/2019	Belenky, Lisa T.	The Center for Biological Diversity	Threatened, Endangered, and Candidate Species	Failure to adequately identify and analyze impacts to habitat connectivity and linkages critical to landscape conservation values and adaptation;	Connectivity impacts were addressed in the Draft RMPA/EIS on pages 3-83 through 3-84 for the Proposed Action, 3-87 to 3-88 for the All Mowing Alternative, and 3-89 to 3-90 for the Hybrid Alternative. The commenter is not specific as to what they believe was inadequately addressed and, therefore, a specific response cannot be provided. Additional information on how connectivity and linkages were addressed in the Draft RMPA/EIS are provided in Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow).
B3-7	9/5/2019	Belenky, Lisa T.	The Center for Biological Diversity	Vegetation and Jurisdictional Waters	Failure to adequately identify and analyze impacts to rare plants and rare plant communities including desert dry wash woodlands; and	Impacts to rare plants and rare plant communities were addressed in the Draft RMPA/EIS in Section 3.6: Vegetation and Jurisdictional Drainages. The vegetation communities found in the Project area were identified in Table 3.6-1 on page 3-43 of the Draft RMPA/EIS. Communities were identified by alliance. The catclaw acacia shrubland alliance was identified and is a type of dry wash woodland. The catclaw acacia vegetation community within the development areas is shown on Figure 3.6-11 of Appendix D. Impacts were addressed starting on page 3-47 of the Draft RMPA/EIS. Impacts to migratory birds that could use these areas were addressed in Section 3.7: Wildlife, Migratory Birds, and Special Status Species.
B3-8	9/5/2019	Belenky, Lisa T.	The Center for Biological Diversity	Alternatives	Failure to consider a reasonable range of alternatives that would avoid significant impacts including a reduced footprint alternative that would avoid the highest density occupied desert tortoise habitat areas, rare plants, and ephemeral streams and washes and associated plant communities.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why a reduced footprint was not carried forward for analysis. NEPA regulations do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives nor do they require a reduced size alternative. The BLM developed alternatives to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process are compliant with NEPA.
B4-1	7/23/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	Given the significant impact this project would have on the OSNHT, OSTA also requests an opportunity to serve as a “concurring party” related to development of a Programmatic Agreement for compliance provisions of the National Trails System Act.	In accordance with 36 CFR § 800.6(c)(3), a concurring party is a consulting party invited to concur in the agreement document but who does not have the authority to amend or terminate the agreement. Like an invited signatory's signature, a concurring party signature is not required to execute the agreement; a concurring signature is essentially an endorsement of the agreement. The BLM confirms that the OSTA can act as a concurring party.
B4-2	7/23/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	OSTA notes significant adverse effect from the Gemini Solar Project on the historic setting of the Old Spanish National Historic Trail, particularly to the California Crossing “High Potential Segment” identified in the OSNHT Comprehensive Administrative Strategy. Components of the proposed project would physically and visually detract from the vicarious	Refer to Master Response 5: Old Spanish National Historic Trail , regarding the MOA with SHPO and the OSNHT Co-Administrators, and the results of the analysis presented in the Draft RMPA/EIS that is consistent with the comment that the Project would result in substantial interference with the nature, purpose, and primary uses of the OSNHT during the Project's construction and operation.

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					experience associated within the OSNHT trail corridor by substantially altering the underlying landscape and overall setting of the valley.	
B4-3	7/23/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	<p>OSTA is concerned with the proposed rerouting of the Old Spanish Trail Road as identified in the Draft RMPA/EIS under MM REC-1. It provides insufficient mitigation for impacts to the OSNHT and will negatively affect the recreational trail experience. Strategies to mitigate impacts under the National Historic Preservation Act do not mitigate stated objectives of Section 12 of the National Trail System Act that affords visitors and trail users “an opportunity to vicariously share the experience of the original users of the historic route.”</p>	<p>The Old Spanish Trail Road was addressed in the Draft RMPA/EIS, and supplemental information is provided in the BLM Manual 6280 Inventory and Impact Analysis that was incorporated into the Draft RMPA/EIS by reference. Page 3-3 of the Draft RMPA/EIS states, "within the corridor of the OSNHT is the Old Spanish Trail Road that can be accessed by properly equipped motorized vehicles (e.g., jeeps). This road is not linked historically to the OSNHT, nor to historical events associated with the trail, but provides proximal access and recreational value that could be utilized by those wanting to experience the trail." Old Spanish Trail Road is not a historic route of the Old Spanish Trail. It only provides "proximal access and recreational value" because it can be driven (which is not a vicarious experience). Re-routing is a valid option to maintain that "proximal access and recreational value" within the same valley. It is not a measure to mitigate impacts to the OSNHT, nor is it presented as such in the Draft RMPA/EIS. MM REC-1 was presented on page 3-16 of the Draft RMPA/EIS to reduce OHV impacts: "MM REC-1 would also minimize adverse effects on OHV access along Old Spanish Trail Road and Route 167 within the Project site." On page 3-152 of the Draft RMPA/EIS, the mitigation is described as follows: "implementation of MM REC-1 from Section 3.2: Recreation would reroute Old Spanish Trail Road to either the California Wash (for users on foot) or the Arrowhead Trail (for users in vehicles) to maintain connection to Valley of Fire Road, maintaining access through the valley for recreational users."</p> <p>The comment that "strategies to mitigate impacts under the National Historic Preservation Act do not mitigate stated objectives of Section 12 of the National Trails System Act that 'affords visitors and trail users an opportunity to vicariously share the experience of the original users of the historic route'" is acknowledged and is not in conflict with the conclusions made in the Draft RMPA/EIS. The Draft RMPA/EIS stated on page 3-141, "[t]he nature, purpose, and primary uses of the OSNHT in the Project area are to offer exceptional opportunities for the public to enjoy and appreciate both the natural and cultural environment,” including providing a scenic experience, a high-quality recreational experience, and the opportunity to share vicariously the experience of the original users in this area, known as the “jornada del muerte.”...The Project would substantially interfere with the overall setting of the OSNHT corridor in the California Crossing HPRSEG."</p> <p>Mitigation has been presented and additional mitigation added to the Final RMPA/EIS as described in the Master Response 5: Old Spanish National Historic Trail and in Appendix H; however, the mitigation does not change the substantial interference conclusion identified in the Draft RMPA/EIS. The mowing alternatives allow for some reduction of impacts to elements of the OSNHT character and the restoration of the OSNHT in 30 years, but do not avoid or minimize the effects during construction and operation of the solar facility.</p>
B4-4	7/23/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	We believe additional mitigation strategies should be considered for preserving the California Crossing High Potential Segment including preparation and implementation of a Recreation and Trail Development Strategy the entire segment of the OSNHT called the "Jornada del Muerte" from California Crossing to	The comment is acknowledged; however, the development of a Recreation and Trail Development Strategy for the entire California Crossing segment of the OSNHT corridor is beyond the scope of the Gemini Solar

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					Las Vegas Springs [High Potential Historic Site]. This effort would maximize the visitor experience and protect the continuous nature of the historic route.	RMPA/EIS. This type of action is not an appropriate mitigation for the solar development as it is a separate land management decision. Additional mitigation strategies are being considered during the development of the MOA with the NPS Old Spanish Trail Administration Office, in consultation with the BLM Old Spanish Trail Administrator. The MOA will define additional measures to minimize effects to the OSNHT and its nature and purposes and primary uses. The BLM, SHPO, OSTA, and federal OSNHT administrators (BLM and NPS) are also developing an HPTP that will address adverse effects on historic properties resulting from the Project. Under the NHPA Section 106 process, the BLM is consulting with the SHPO/Tribal Historic Preservation Officer and other parties to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties.
B4-5	7/23/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	In addition to offset mitigation impacts being considered, OSTA supports establishing a permanent trust fund for the life of this project, including decommissioning measures to restore the environment.	The Decommissioning and Site Reclamation Plan, which will be posted on ePlanning website when the Final RMPA/EIS is released to the public, details the decommissioning, reclamation, and revegetation methods that would be implemented once the life of the Project comes to an end. The comment regarding a request to require a trust fund is noted and will be considered at the ROD.
B5-1	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	OSTA believes that this statement does not put proper emphasis on the existing land use allocation of the application area of project direct and in-direct for solar generation entirely within the “federal protection corridor” of the Old Spanish National Historic Trail. The core issue is that BLM should have denied the application up front because there is a pre-existing land use allocation for the purposes of management of the federal protection corridor for the designated Old Spanish National Historical Trail under the National Trails System Act. The BLM should have advised the applicant that there was an existing Congressionally enacted “special designation” that conflicts with the proponent’s plan.	The comment is acknowledged. The initial application for a ROW was submitted in 2008. None of the typical evidence of the Old Spanish Trail has been identified in this area, such as paths through vegetation, shallow swales, vegetation changes, axe-cut branches, rock cairns, masonry walls, wagon wheel ruts, wagon hardware, horseshoes, mule shoes, nor were historic accounts or drawings clearly identifying use of this valley available. A study was performed under the ARRA that identified the 5,843-foot (1,781-meter) segment within the Project area; however, this segment was not identified during the Class III intensive surveys of the Project area because it has been turned into a modern two-track road. No artifacts, wagon ruts, or any other evidence of the Old Spanish Trail is found in association with this segment anymore. The data from the ARRA report was never published nor submitted to data repositories. The Solar PEIS (2014), which went through extensive review and a public process, did not preclude this area for solar development, as it identified it as a variance area and, in fact, identified only a narrow linear route as the Old Spanish Trail in the West Tributary Wash (between what is now proposed as development area A and B). This area did not align with the segment found during the ARRA work from 4 years prior. The location and consideration of the Old Spanish Trail in this area was revised in the Administrative Strategy for the OSNHT that was released in December 2017, after work on this Project application commenced. The 2017 Administrative Strategy also did not include the ARRA findings as it relied only on the least-cost model for positioning the Old Spanish Trail in this area (the model used when no other evidence is available). It was only late in the process that the ARRA study was provided to BLM (April 2019) and greater consideration of the Old Spanish Trail and its context in this area considered. A more thorough investigation and evaluation of the OSNHT has occurred through this NEPA process and the information discovered, and analysis

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						performed will be considered in the decision as to whether or not to grant a ROW.
B5-2	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	The \$1 billion-dollar Gemini Solar Project is expected to become the nation’s large solar facility. It would be located entirely within the OSNHT trail corridor. The Project and its associated features would directly and indirectly impact the OSNHT and its “California Crossing High Potential Segment,” as identified in BLM’s Comprehensive Administrative Strategy for the OSNHT.	The statements are consistent with the findings of the Draft RMPA/EIS (refer to Section 3.14: Old Spanish National Historic Trail) and the BLM Manual 6280 Inventory and Analysis that was incorporated into the Draft RMPA/EIS by reference. The impacts and findings will be considered in the decision as to whether or not to grant a ROW.
B5-3	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	OSTA believes the project, as proposed, would substantially interfere with the nature and purpose of the OSNHT under the National Trail System Act. The viewshed analysis performed by Panorama Environmental, Inc. at Inventory Observation Points (IOP) identified over ten miles of the OSNHT on BLM-managed land with impacted views of the Project. All locations within the fence line of the Project are effectively within the OSNHT “federal trail protection corridor.”.	The Draft RMPA/EIS and the BLM Manual 6280 Inventory and Analysis that was incorporated into the Draft RMPA/EIS by reference presented the conclusion that the Project would result in substantial interference. The Project site is visible across the valley but not in any areas outside the valley. The visual simulations showed that the Project is difficult to see and detect across the landscape and blends in with the landscape at distances even 0.5-mile (0.8-kilometer) away. It is most visible when a viewer is in close proximity to the panels (such as along Valley of Fire Road when where the Project is adjacent to the road). Visual impacts on the OSNHT are addressed on page 3-142 of the Draft RMPA/EIS, where it states "[b]ecause the OSNHT corridor extends through the Project site, where a viewer is within 0 to 0.5 mile (0 to 0.8 kilometer) of the Project, visual impacts would be high."
B5-4	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Alternatives	The draft EIS failed to propose alternatives for either relocating or eliminating project tracts having adverse impacts to the California Crossing High Potential Segment and OSNHT corridor.	Refer to Master Response 1: Alternatives for a discussion of the process for consideration of alternatives in compliance with NEPA. Refer to Master Response 5: Old Spanish National Historic Trail for an explanation as to why the OSNHT corridor could not be avoided
B5-5	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Alternatives	Furthermore, nowhere in the document is there any consideration of why the project footprint must be in the “federal protection corridor” and no alternative was provided to indicate that another footprint was considered that would not conflict with the existing special designation.	Refer to Master Response 1: Alternatives for a discussion of the process for consideration of alternatives in compliance with NEPA. Refer to Master Response 5: Old Spanish National Historic Trail for an explanation as to why the OSNHT corridor could not be avoided. The detailed discussion of the alternatives considered is presented in the Alternatives Report that was incorporated by reference into the Draft RMPA/EIS.
B5-6	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Alternatives	BLM is obligated to provide reasonable alternatives to the proposal that would avoid irreversible and irretrievable impacts to the OSNHT, and should prepare such an alternative prior to making any approval, approval with modification, or denial of the application.	The CEQ has stated that “[r]easonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense rather than simply desirable from the standpoint of the Applicant” (CEQ 1983). The CEQ and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives. To determine the alternatives that are reasonable and subject to inclusion in the RMPA/EIS, the alternatives screening process evaluated on-site alternatives, alternative configurations, private land, other BLM-administrated land, brownfield and/or degraded sites, alternative technologies, concentrated solar thermal generation, concentrated PV technology, other renewable energy projects, distributed generation, and conservation and demand side management. Through the alternatives screening, two action alternatives to the Proposed Action were identified, that are practical and feasible while the rest were screened out. The Draft RMPA/EIS also analyzed the No Action Alternative, under which the BLM would not authorize a ROW grant for the Project nor an RMPA, and no irreversible or irretrievable impacts on the OSNHT would

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						<p>occur. No action alternatives were reasonable or feasible that avoid the OSNHT corridor, since it spans the entire valley where the solar facility is located. The OSNHT generally is located in the more level areas and valleys of the region that are suited for solar development (since wagon travel over these valleys was likely easier than through the mountain ranges).</p> <p>The conclusions of the Final RMPA/EIS and supporting documentation will be considered when the decision as to whether or not to grant a ROW is made.</p>
B5-7	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	<p>Failure to follow BLMs own policy for management of designations under the National Trails System Act in Handbook 6280.</p> <p>OSTA believes, according to this Handbook that the BLM has a responsibility to amend its own existing Resource Management Plan to incorporate protection for the OSNHT corridor; this has not been done.</p> <p>Furthermore, the NTSA requires that “efforts shall be made to avoid activities incompatible with the purposes for which such trails were established.”</p> <p>BLM has fundamentally failed in the Gemini Project Draft RMPA/EIS to</p> <p><u>comply with BLM’s own governing regulations and the intent of the National Trails System Act of 1968.</u></p>	<p>The comment is acknowledged; however, the development of a Recreation and Trail Development Strategy for the entire California Crossing segment of the OSNHT corridor is beyond the scope of the Gemini Solar RMPA/EIS. This type of action is not an appropriate mitigation for the solar development as it is a separate land management decision. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of OSNHT mitigation.</p>
B5-8	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Consultation, Coordination, and Public Involvement	<p>OSTA requests an opportunity to serve as a “consulting party” in a Programmatic Agreement / Memorandum Agreement for compliance provisions of the National Trails System Act (4) as part of the decision record for this federal action.</p>	<p>The request is acknowledged and the OSTA can be a consulting party consistent with the guidelines of the BLM Manual 6280. The developer has been coordinating with Ashley Hall of the Nevada chapter of the OSTA since 2018, including having held several in-person meetings. The BLM will continue to coordinate with the OSTA.</p>
B5-9	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	<p>The California Crossing High Potential Segment of the OSNHT contains feature of topography, vegetation, surrounding geology, and hydrology that would likely be recognizable to emigrants who traveled through this region during the historic period. This stretch of the Old Spanish Trail was famously known as the Jornada del Muerte (day’s journey of death) due to the lack of water through this area. Components of the proposed project would physically and visually destroy the vicarious experience associated with the OSNHT trail corridor by substantially altering the underlying landscape and overall setting of the valley.</p>	<p>The comments are consistent with the analysis and conclusions presented in Section 3.14: Old Spanish National Historic Trail of the Draft RMPA/EIS.</p>
B5-10	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	<p>The National Trail System Act requires specific treatment for adverse impact and mitigation. In light of the significant adverse impacts (both physical and visual) the Gemini Solar Project would have upon the corridor of the Old Spanish National Historic Trail, OSTA believes that BLM should mandate that the project applicant undertake substantive mitigation measures to offset those impacts.</p>	<p>Refer to Master Response 5: Old Spanish National Historic Trail for a discussion of mitigation strategies are being considered during the development of the MOA with the NPS Old Spanish Trail Administration Office, in consultation with the BLM Old Spanish Trail Administrator.</p>
B5-11	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Old Spanish National Historic Trail	<p>If the Gemini Solar Project is approved the National OSTA organization recommends direct mitigation to:</p> <ul style="list-style-type: none"> • Establish an educational kiosk facility with parking area alongside I-15 to improve education and public awareness of the California Crossing High Potential Segment. This open, but roofed, display would utilize a mix of interpretive products and include suitable technology to provide a multimedia narrative of the trail history and its significance for development of the southwest U.S. • Provide corporate sponsorship for the annual OSTA Conference for the duration of the project. • Fund development and implementation of a comprehensive OSNHT Recreation and Development Plan to address recreational access and provide opportunities for the public to experience the historic trail setting to gain an “open-air” perspective of how the local landscape influenced commercial trade. This management plan would also provide appropriate interpretation and signage for the OSNHT to improve the visitor experience and appreciation for national historic trails. <p>Furthermore, OSTA recommends establishment of a trust fund to promote the preservation and appreciation of the OSNHT for enjoyment of the American people. This fund would help mitigate cumulative impacts to the trail and “establish long term conducting trail-related research projects, or</p>	<p>Refer to Master Response 5: Old Spanish National Historic Trail for a discussion of the mitigation considered and a discussion of the revised voluntary contribution by the Applicant, from \$25,000 to \$250,000. This substantial increase can be used towards the mitigations identified in this comment.</p>

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					providing education and training to volunteers on methods of trails planning, construction, and maintenance” directly tied to volunteer organizations per provisions of the National Trail Systems Act.	
B5-12	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	Consultation, Coordination, and Public Involvement	In regards to decommission of the project, OSTA seeks status as a consultant to the process of restoring the landscape.	The request is acknowledged.
B5-13	9/5/2019	Brittner, Lynn	Old Spanish Trail Association	BLM Management	In summary, OSTA supports the EIS public process, but asserts that the Nevada BLM must first fully execute its responsibilities under its own Resource Management Plan and its NTSA-mandated responsibility for managing and administering congressionally designated trails, before the Gemini Project EIS receives Final status.	The comment is acknowledged. The findings of the NEPA analysis, NHPA Section 106 process, and the BLM Manual 6280 Inventory and Analysis will be considered by the BLM when determining whether or not to grant a ROW and amend the 1998 Las Vegas RMP.
B6-1	9/5/2019	Clarke, Chris	National Parks Conservation Association	Air Quality and Climate Change	The siting and scale of the Gemini Solar Project, however, may well aggravate rather than ameliorate the effects of climate change on the Mojave Desert in southern Nevada.	Refer to Section 3.9: Air Quality and Climate Change for a discussion of the carbon emissions from the Project. The analysis quantifies the GHG emissions during construction and operation but presents the offsets of the renewable energy generated. Refer to Table 3.9-4 on page 3-98 of the Draft RMPA/EIS that demonstrates the Project could offset over 19 million metric tons (MT) units of equivalent carbon dioxide (CO2e) over the Projects lifespan. It is the equivalent offset of the emissions of over 130,000 passenger vehicles per year, which is a substantial benefit and important means for combatting for climate change.
B6-2	9/5/2019	Clarke, Chris	National Parks Conservation Association	Alternatives	The technology proposed for generating and storing power at Gemini, photovoltaic panels and battery storage, can be deployed in alternative locations with far less habitat value, such as urban spaces developed on lands disposed by the BLM under the Southern Nevada Public Land Management Act of 1998.	Refer to the Master Response 1: Alternatives regarding rooftop solar as an alternative and why other alternatives to this particular utility-scale development were not feasible.
B6-3	9/5/2019	Clarke, Chris	National Parks Conservation Association	Vegetation and Jurisdictional Waters	The assertion in the RMPA/EIS in section 3.7 (Wildlife, Migratory Birds, and Special Status Species) that mowed vegetation was “expected to rebound within a few years of construction” fails to account for differences in species composition of that regrown vegetation. While species such as creosote (<i>Larrea tridentata</i>) and bursage or burro bush (<i>Ambrosia dumosa</i>) may well regrow within a few years, slow-growing species such as yucca and some cacti may take significantly longer to recover, if they do in fact recover.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for a discussion of how vegetation would be mowed initially and then hand trimmed thereafter. Refer to Master Response 2: Mojave Desert Tortoise (under Mowing as a New, Unproven Method) for a discussion of how mowing within the solar facility has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements. The Draft RMPA/EIS acknowledged that the Proposed Action and traditional development methods would have significant impacts on cacti and yucca. The mowing alternatives reduces these impacts by leaving these species in place. Refer to MM VG-1 in Appendix H for the numerous measures included to reduce impacts to yucca and cacti.
B6-4	9/5/2019	Clarke, Chris	National Parks Conservation Association	Threatened, Endangered, and Candidate Species	Intact habitat in the southwest’s north-south trending valleys will be crucial to ecological resilience as the desert warms. The Gemini Solar project will add a 7,000-plus acre blockage to migration in the region of the Moapa Paiute reservation. The RMPA/EIS does not sufficiently address the impacts of this barrier to northward migration.	Wildlife effects were addressed starting on page 3-69 of the Draft RMPA/EIS. The analysis identified on page 3-71 that, "[t]he fencing around the Project could block the free movement of any wildlife that cannot fit through or under the fence. Since smaller wildlife are common and abundant, effects would not be adverse. Impacts on the movements of large game species would be minimal since such species rarely use the Project site." It is unclear what migration the commenter is referring to. Bighorn sheep generally do not use the area. Birds can migrate over the

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						<p>area. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for more information on bighorn sheep in the Project area.</p> <p>Movement of desert tortoise would be impacted for the Proposed Action, but those impacts are reduced with the mowing alternatives, as was discussed in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) for more information on desert tortoise impacts.</p>
B6-5	9/5/2019	Clarke, Chris	National Parks Conservation Association	Air Quality and Climate Change	<p>Studies by the National Park Service have demonstrated that National Parks in the California Desert provide significant carbon sequestration services, at rates ranging from .118 metric tons per acre per year in Death Valley NP to .4 metric tons per acre per year in Mojave National Preserve. Though some of this sequestration is mechanical in nature, through deposition of carbon dissolved in rainwater into the subsoil, a growing body of evidence suggests that biological processes including mycorrhizal action account for a large percentage of sequestration in desert soils. These services are lost when desert shrublands are disrupted; in fact, if the caliche stored in the subsoil is breached by construction, development can actually cause release of that stored carbon. Given that the intent of the Gemini Solar proposal is to address our society's greenhouse gas emissions, the loss of carbon sequestration should be examined in the RMPA/EIS.</p>	<p>Refer to Response to Comment B6-1 for a discussion of the carbon off-sets of the Project. Assuming the commenter is correct that the maximum sequestration is occurring of 0.4 metric ton of carbon per year per acre, and that the Project would result in the loss of all carbon sequestration, the total amount lost would be approximately 85,000 metric tons of carbon throughout the life of the project. This quantity represents 0.4 percent of the offset of over 19 million metric tons of carbon dioxide emissions over the life of the Project. The mowing alternatives would allow for a much greater reduction in lost carbon sequestration since vegetation would be maintained on the Project site. Analysis of carbon sequestration loss and its minimal impact on the offsets of GHG emissions from the Project is added to the Final RMPA/EIS. According to the Preliminary Geotechnical Evaluation, most caliche layers on the Project site were not encountered until 5 to 10 feet below the ground surface, although one boring encountered it 3 feet below the surface (Louis Berger 2019). Very few construction activities (e.g., installation of piers) would disturb caliche layers, limiting how much carbon stored in caliche could be released by exposure to the elements.</p>
B6-6	9/5/2019	Clarke, Chris	National Parks Conservation Association	Native American Concerns	<p>Though the proximity of the Gemini Solar site to the Salt Song Trail is mentioned briefly in the RMPA/EIS, the document includes no discussion of the project's direct impacts on the visual resources or other landscape-level qualities of Gemini Solar on the Salt Song trail corridor.</p>	<p>The Salt Song Trail is located below the Arrow Canyon Range, which is located over 10 miles (16 kilometers) from the Project site and closer to the Moapa Solar Project. The Project site would not be visible from the Salt Song Trail area due to distance and intervening topography. The Salt Song Trail does not cross through the Project area.</p>
B6-7	9/5/2019	Clarke, Chris	National Parks Conservation Association	Native American Concerns	<p>Additionally, while the Moapa Paiute are indeed closely involved with the Salt Songs and the associated landscape, there are, depending on the manner of counting, between 16 and 31 other tribal groups affiliated with the Southern Paiute and Chemehuevi to whose culture the Salt Song Trail is central. While we understand that some tribal cultural concerns are delicate and inappropriate for discussion in a publicly available document, the general importance of the Salt Songs to Southern Paiute and Chemehuevi peoples across the Southwest has been well publicized by Native peoples of the desert. Despite the Moapa's close proximity to the Arrow Canyon corridor of the Salt Song trail, it is our understanding that the entire trail circuit is very important to Southern Paiute and Chemehuevi peoples throughout Nevada, California, Utah, and Arizona. The impacts of Gemini Solar to their culture should be addressed more fully.</p>	<p>Additional information on the Salt Songs and their importance to the tribal communities in the region was provided in Appendix F to the Draft RMPA/EIS. The Salt Song Trail is not within the Project area. Native American concerns are addressed through the Section 106 consultation process, as was described in Section 4.3: Formal Consultations with Tribal Governments, on page 4-1 and in Table 3.13-1 on page 3-133 of the Draft RMPA/EIS. The impacts of the Gemini Solar Project on Native Americans are addressed in Section 3.13: Native American Religious Concerns and Appendix F. The information identified by the commenter regarding the importance of the Salt Songs to Southern Paiute and Chemehuevi peoples appears to already be included in Appendix F.</p>
B6-8	9/5/2019	Clarke, Chris	National Parks Conservation Association	Old Spanish National Historic Trail	<p>In particular, we are concerned with the permanent changes to the character of one of the most important identified segments of the OSTNHT corridor. As stated in the Old Spanish National Historic Trail Feasibility Study and Environmental Assessment (NPS 2001), the undeveloped surroundings of much of the OSTNHT through this area were strong factors in NPS's recommendation in favor of a National Historic Trail.</p>	<p>Refer to Master Response 5: Old Spanish National Historic Trail for a discussion of the evidence of the Old Spanish Trail in the Project area. While evidence of the Old Spanish Trail is lacking, the Draft RMPA/EIS and BLM Manual 6280 Inventory and Analysis incorporated by reference into the Draft RMPA/EIS concludes that the solar development would result in substantial interference with the land use designation of the area as a HPRSEG of the OSTNHT due to the fact that it introduces modern features into the otherwise natural landscape.</p>

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B6-9	9/5/2019	Clarke, Chris	National Parks Conservation Association	Old Spanish National Historic Trail	<p>We are deeply concerned that all the alternatives aside from the No Action alternative would apparently result in the permanent destruction of more than a mile — 1,781 meters — of a High Potential Route Segment (HPRSEG) of the OSTNHT in the historically significant California Crossing area. This HPRSEG, on the older eastern route of the Old Spanish Trail but within sight of the western route, is significant in that the vast majority of travelers on the Old Spanish Trail during its heyday would have passed through this area. Unlike the majority of the length of the OST between Santa Fe and Los Angeles, which consists of a number of braided routes ranging over and area hundreds of miles north to south, the stretch west and south of California Crossing is a segment where those multiple routes converged in either direction. Cross-continental traffic was thus funneled through the project area from thousands of square miles of territory.</p> <p>Geological and pedological evidence of the passage of wagons along this stretch of the HPRSEG would be permanently damaged by construction, and in evitable wind-driven soil erosion from the construction area would damage or bury visible surficial evidence of the trail.</p>	<p>Refer to Master Response 5: Old Spanish National Historic Trail for more information on the evidence of the Old Spanish Trail in this area. There is no geologic or pedological or surface evidence of passage of wagons in the Project area. The 1,781-meter (5,843-foot) segment mentioned by the commenter has been altered to a well-used modern two-track, as stated on page 3-139 of the Draft RMPA/EIS. No other physical evidence or artifacts of the Old Spanish Trail were found during comprehensive Class III surveys of the Project area.</p> <p>While physical evidence of the Old Spanish Trail is minimal, the Draft RMPA/EIS and BLM Manual 6280 Inventory and Analysis incorporated by reference into the Draft RMPA/EIS concludes that the solar development would result in substantial interference with the land use designation of the area as a HPRSEG of the OSNHT due to the fact that it introduces modern features into the otherwise natural landscape.</p>
B6-10	9/5/2019	Clarke, Chris	National Parks Conservation Association	Old Spanish National Historic Trail	Public access would likely be restricted, rerouted, and otherwise infringed upon due to security and public safety concerns. Even if public access was preserved along the alignment of the HPRSEG, walking for more than a mile through an intensely industrial setting would hardly be in keeping with the public experience that the establishment of the OSTNHT was intended to preserve.	The comment is acknowledged and is consistent with the conclusions presented in the Draft RMPA/EIS and the BLM Manual 6280 Inventory and Analysis. Refer also to Master Response 5: Old Spanish National Historic Trail regarding the impacts of the Project on the trail experience and recreational use. The mowing alternatives would allow for restoration of the OSNHT to its pre-Project conditions after decommissioning of the facility and thus removing the substantial interference in approximately 35 years. Refer to pages 3-150 and 3-152 of the Draft RMPA/EIS for the analysis of decommissioning for the two alternatives.
B6-11	9/5/2019	Clarke, Chris	National Parks Conservation Association	Old Spanish National Historic Trail	Such an accessible, undeveloped and historically significant site will become especially valuable as southern Nevada continues to urbanize. It is worth noting that the bicentennial of the Trail’s period of significance would begin in 1829, at the beginning of the Gemini project’s useful life. It would be a shame to deprive the public of the ability to visit and experience that history by building a massive energy development astride one of the most significant remaining sections of the trail.	The comment is acknowledged. Refer also to Master Response 5: Old Spanish National Historic Trail regarding the impacts of the Project on the trail experience and recreational use. The impacts were adequately addressed and disclosed in the Draft RMPA/EIS and BLM Manual 6280 Inventory and Analysis. The impacts will be considered in the decision as to whether or not to grant a ROW.
B6-12	9/5/2019	Clarke, Chris	National Parks Conservation Association	Consultation, Coordination, and Public Involvement	We note that nowhere in the RMPA/EIS is consultation with the OSTNHT’s NPS/BLM co-administration team cited or mentioned in any way, other than to note that such co-administration exists. It is hard to imagine more knowledgeable sources of information on the trail, its resources, its history, and the potential impacts of development. If the OSTNHT’s co-administrators were not in fact consulted, their input should be solicited and shared with the public.	Considerable coordination with the OSNHT's Co-Administrators was conducted and continues to be on-going. Initial outreach was performed through meetings and phone conversations, starting in early 2018. A mention of the consultation with the Co-Administrators of the Old Spanish Trail has been added to Chapter 4: Consultations, Coordination, and Public Involvement in the Final RMPA/EIS.
B6-13	9/5/2019	Clarke, Chris	National Parks Conservation Association	Alternatives	We should reiterate that NPCA is a strong supporter of renewable energy development in appropriate places. If there was some quality of the proposed Gemini Solar site that made it uniquely suited to renewable energy generation, then we might look at these and other significant unmitigable impacts in a different light. However, as we mention above, there is nothing in the technology of either photovoltaic solar power generation or battery power storage that demands that such generation and storage be consolidated into one location relatively remote from demand.	The comment is acknowledged. Refer to Master Response 1: Alternatives for additional discussions of the alternatives considered. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length.
B6-14	9/5/2019	Clarke, Chris	National Parks Conservation Association	Alternatives	It can be argued that more decentralized deployment of photovoltaic solar and battery storage carries greater social benefit, such as economic boon to owners of smaller properties such as parking lots who develop solar.	The comment is noted. Refer to Master Response 1: Alternatives regarding rooftop solar as an alternative and why it was not an appropriate alternative to this particular action.
B6-15	9/5/2019	Clarke, Chris	National Parks	Old Spanish National Historic Trail	Given the serious and permanent unmitigable impact to the OSTNHT and desert tortoise habitat, as well as the as yet undescribed impacts to the Salt Song Trail and other resources mentioned above, we	Impacts to desert tortoise habitat would be adverse but are reduced through the mowing alternatives presented in the Draft RMPA/EIS, as also

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			Conservation Association		regretfully urge you to adopt the “No Action” alternative to preserve the Old Spanish Trail National Historic Trail for future generations of Nevadans and Americans.	explained in Master Response 2: Mojave Desert Tortoise . Refer to Response to Comment B6-7 for the discussion of the Salt Song Trail. The NEPA process allows for the review and disclosure of impacts on the environment and the implementation of mitigation to reduce effects where possible. The Draft RMPA/EIS provides that analysis and will be factored into the decision-making process.
B7-1	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	<p>The Gemini Solar Project would be one of the largest solar projects ever approved by the Bureau of Land Management (BLM). At 7,100 acres or 11 square miles on BLM lands with identified valuable resources, this could also be the solar project that has the most intensive resource impacts. The project would be approved on high quality habitat for the desert tortoise and other wildlife. The project site also has a large quantity of rare plants and is rich in cultural resources.</p>	<p>The commenter is correct that the Project is one of the largest solar projects on BLM lands. Resource impacts were addressed in the Draft RMPA/EIS. It is difficult to substantiate that this Project has the most intensive resource impacts of any solar project on BLM lands. The Draft RMPA/EIS addressed the impacts as required under NEPA. High-quality habitat impacts for desert tortoise were addressed and acknowledged.</p> <p>Rare plants and habitat on-site include threecorner milkvetch and Nye milkvetch. The Hybrid Alternative and All Mowing Alternative were designed to avoid the highest density of identified threecorner milkvetch individuals and populations, particularly in the eastern portion of development area C and all of development area F. A total of 1,102 individual plants were avoided in development area F and 139 in development area C. The Draft RMPA/EIS identified the adverse impacts to rare plants. MM VG-2 in Appendix H includes numerous methods to reduce impacts to threecorner milkvetch and other special status plants.</p> <p>Three eligible or recommended eligible pre-historic resources were found within the Project site, as was shown in Table 3.12-1 of the Draft RMPA/EIS. Cultural concerns related to the OSNHT were acknowledged in the Draft RMPA/EIS as significant and adverse.</p>
B7-2	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	The BLM proposes to use vegetation mowing on a large part of the project site, but has no peer reviewed data showing that this would be better for desert tortoises or other biological resources found on the project site.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the proposed use of vegetation mowing and the understanding that it is a new method. Long-term monitoring and study will be a requirement of the Section 7 consultation and Biological Opinion, and as described in Master Response 2: Mojave Desert Tortoise (under Mowing, as a New, Unproven Method), including the requirements for detailed monitoring plots and methods.
B7-3	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Recreation	It would turn the famous Valley of Fire Road into an industrial park and will also adversely impact recreational opportunities.	The analysis of the visual impacts on recreational users heading towards Valley of Fire State Park were addressed on page 3-108 of the Draft RMPA/EIS as follows "Motorists and recreationalists traveling on Valley of Fire Road towards Valley of Fire State Park or BSBCB would notice, for a few minutes, the perimeter fences, access roads, solar arrays, collector system, and O&M facilities in the foreground-middleground and other Project facilities in the foreground-middleground and background, including substations and gen-tie lines (refer to Figure 3.10-53). Perimeter fences, access roads, solar arrays, and collector system features in the foreground-middleground (within 0.5 mile [0.8 kilometer]) of Valley of Fire Road would not dominate views due to their relatively low height." Additional analysis was provided in Table 3.10-1 of the Draft RMPA/EIS.

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						Refer to Master Response 7: Impacts to Recreation for more information on how recreational impacts were addressed. Impact to recreational resources was addressed in Section 3.2: Recreation of the Draft RMPA/EIS and is also discussed in Section 3.10: Visual Resources. The Draft RMPA/EIS describes existing recreational uses on pages 3-14 to 3-15 as follows, "The most common recreational activities likely to occur in the Project area include OHV use and potentially camping, hiking, and shooting. All access routes in the Project area are designated as limited. OHV travel in the Project area is limited to existing roads, trails, and dry washes. Recreationalists may travel through the Project area on their way to sites in the Muddy Mountains. Popular attractions that draw recreationalists to the area include Valley of Fire State Park, one of Nevada's most visited parks; the Muddy Mountains, including Muddy Mountains Wilderness Area, Hidden Valley ACEC, Muddy Peak, Buffington Pockets, Colorock Quarry; BSBCB; the OSNHT; and Lake Mead National Recreation Area. Recreation attractions in the Project area are shown on Figures 3.1-3 and 3.2-2." The analysis acknowledges the loss of the area to dispersed recreation as well as recreational use of the OSNHT except through certain areas of the site, such as along the California Wash. Connections to Valley of Fire State Park and BSBCB would be maintained.
B7-4	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	The BLM has failed to review a full range of reasonable alternatives including off site alternatives and a reduced footprint alternative.	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered, including off-site and reduced footprint alternatives and the alternative evaluation process.
B7-5	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	NEPA and Decision Process	The BLM has attempted to meet much of the streamlining requirements of Secretarial Order 3355. The draft Environmental Impact Statement (DEIS) is in the 150-page range and the timeline for scoping was reduced to 45 days. But the BLM did not meet the one year timeline for reviewing Gemini Solar and the DEIS is lacking significant information required for reviewers to make complete meaningful comments.	While the Draft RMPA/EIS is limited to 150 pages, the document is supplemented by numerous appendices and over 22 technical studies available on the ePlanning website. There is no required length for the public scoping comment period for an EIS under NEPA.
B7-6	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and	BLM Management	The project would also be approved amending the 1998 Las Vegas (Southern Nevada) Resource Management Plan, yet BLM has stalled its own revision of that plan. The plan outlines alternatives that would and could result in higher valued conservation designations in the region. Two of these would create a California Wash Area of Critical Environmental Concern and upgrade the Visual Resource Management Class Objective to VRM Class I VRM Class II.	The full update to the 1998 Las Vegas RMP is outside the scope of this Final RMPA/EIS. The 1998 Las Vegas RMP is the current approved RMP that the Project is assessed under. The amendment proposed as part of the Project would be only to the VRM Class in the Project area, changing it from a Class III to a Class IV to be compatible with the solar development and particularly the visibility of the proposed transmission structures. Refer

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			Morongo Basin Conservation Association			to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for more information on the change to the VRM class.
B7-7	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	Approving the Gemini Solar Project for an amendment to the 1998 plan will create far more conflicts and management issues than allowing for an updated decision managing these lands. The demographics of Southern Nevada have changed so much that using an updated RMP to manage the region would be far more stable than a plan amendment.	The comment is acknowledged but revisions to the 1998 Las Vegas RMP are beyond the scope of the Gemini Solar Final RMPA/EIS.
B7-8	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	NEPA and Decision Process	The BLM received 34 scoping comment documents (including from Basin and Range Watch and Western Watersheds Project), but the DEIS does not individually respond to any of the comments like in other EIS documents. There are no responses to scoping comments in the DEIS, Appendices or supporting documents. The level of detail in these documents has been overlooked and BLM must release a supplemental EIS to compensate for this.	Providing individual responses to scoping comments is not required under NEPA. A Scoping Report was prepared and made available on the ePlanning website. Key topics raised included concern over the location and the purpose and need for the Project, concerns over impacts to desert tortoise and threecorner milkvetch, concerns over the visual impacts of the Project, impacts to the Arrowhead Highway, impacts to Native American resources, concerns over conflicts with the OSNHT, compliance with the 1998 Las Vegas RMP and FLPMA, consideration of waste generation and battery storage wastes, the need to address fire hazards, concerns over loss of OHV trails, and the need to address socioeconomic impacts.
B7-9	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	But this is only a partial and selective quote of the Federal Land Policy Management Act (FLPMA) concerning multiple use, where the same mandate to manage public lands must also include wildlife and fish, scenic values, and historic values, as well as recreation : ...a combination of balanced and diverse resource uses that takes into account the long term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output. (43 U.S. Code § 1702(c))	Refer to Master Response 1: Alternatives for a discussion of the BLM's purpose and need. This purpose and need does not preclude the consideration of environmental protection and preservation under FLPMA. The action is subject to NEPA and through the NEPA process the impacts to the cited resources are identified. The NEPA document is an informational document and meant to support the findings for issuance or denial of the ROW application.
B7-10	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	A 30-year lease to mow, apply herbicides, drive over, and grade such a large area of public lands in Mojave Desert ecosystems would greatly impair the quality of the environment here, and full restoration of this arid land could take centuries, thus being a virtually permanent impairment. BLM should not simply look at a purpose and need that seeks the greatest economic return on these public lands, but must also consider and balance the watershed, wildlife and fish, natural scenic values, and historic values of the land. BLM's Purpose and Need is faulty for not taking these mandates of FLPMA into account.	Refer to Master Response 1: Alternatives for a discussion of the BLM's purpose and need. This purpose and need does not preclude the consideration of environmental protection and preservation under FLPMA. The action is subject to NEPA and through the NEPA process the impacts to the cited resources are identified. The NEPA document is an informational document and meant to support the findings for issuance or denial of the ROW application.

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B7-11	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	The Purpose and Need Statement responds to the Applicant’s request to build a solar project in the region, but by listing the Applicant’s objectives directly under the statement, the BLM is self-fulfilling the statement to only reflect on too narrow a scope of alternatives. The statement is crafted to make approval of the project easier for the BLM and would accommodate the Applicant.	Refer to Master Response 1: Alternatives for a discussion of the purpose and need and why it is adequate under NEPA, and for a discussion of the adequacy of the alternatives process conducted under NEPA. The purpose and need statement is to respond to the ROW application, and not to approve the ROW application. The Applicant has a purpose and need that must be disclosed to the public. The NEPA analysis, not the purpose and need, discloses the environmental impacts of the action and alternatives considered when the BLM is deciding to approve or deny the application.
B7-12	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	Moreover, an agency may not allow the economic needs and goals of a private applicant to define the purpose and need, and hence the inevitable outcome, of an EIS. Id. Federal agencies must “exercise a degree of skepticism in dealing with self-serving statements from a prime beneficiary of the project and to look at the general goal of the project rather than only those alternatives by which a particular applicant can reach its own specific goals.” Env’tl. Law & Policy Ctr., 470 F.3d at 683 (quoting Simmons, 120 F.3d at 666).	Refer to Master Response 1: Alternatives for a discussion of the purpose and need and why it is adequate under NEPA. The purpose and need is to respond to the application submitted by the Applicant under FLPMA and is not related to the economic needs and goals of the Applicant. The BLM prepared an objective analysis of the Project as required under NEPA to support the decision to approve or deny the application. Neither the Draft RMPA/EIS nor the supporting documentation indicate that the BLM will take the economic goals of the Applicant into consideration when making a decision on the ROW grant.
B7-13	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	The project would be built in a region that has several valuable resources that have been designated conservation status by both the 1998 Las Vegas Resource Management Plan and the Clark County Multi-Species Habitat Conservation Plan. In fact, the impacts would be so great, that BLM would need to amend the 1998 RMP just to be able to legally approve the project.	No conservation areas are identified in the Project area under the 1998 Las Vegas RMP. The amendment to the 1998 Las Vegas RMP proposed as part of the Project would be only to the VRM Class in the Project area, to change it from a Class III to a Class IV to be compatible with the solar development and particularly the visibility of the proposed transmission structures. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for more information on the change to the VRM class. Impacts to desert tortoise and threecorner milkvetch, which are species identified under the Clark County Multi-Species Habitat Conservation Plan (MSHCP), are addressed in the Draft RMPA/EIS in Section: 3.6 Vegetation and Jurisdictional Waters and Section 3.8: Threatened, Endangered, and Candidate Species. Impacts to these species are acknowledged as adverse, particularly for the Proposed Action and use of traditional methods, but reduced to a degree through the mowing alternatives. Refer to Master Response 1: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for more information on these species.
B7-14	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo	BLM Management	All resources must be officially compromised by the agency for approval. The project would impact valuable, visual, recreational, cultural, biological, hydrologic and socio-economic resources. The BLM could easily craft a Purpose and Need Statement that prioritizes the conservation of these resources. Doing so would allow for a larger and more reasonable range of alternatives. As it stands now, the statement does not provide a broad enough or accurate enough scope to allow better alternatives.	The purpose and need must address the proposal presented to BLM and cannot include unrelated actions. Refer to Master Response 1: Alternatives for a discussion of the purpose and need, why it is adequate under NEPA, and the purpose of the NEPA analysis to address impacts to various resources. The master response also includes a discussion of how the alternatives were identified pursuant to the requirements of NEPA.

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			Basin Conservation Association			
B7-15	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	BLM has rejected more environmentally acceptable alternatives based on the idea that these alternatives do not meet the scope of the Purpose and Need Statement. BLM is only allowing a specific Purpose and Need that is narrow to the requests of the applicant, but this shows a biased towards a project. A superior Purpose and Need Statement would incorporate better and more responsible environmental protections. The BLM has left environmental conservation out of the Purpose and Need Statement and this eliminates many major concerns from stakeholders. A broader purpose and need statement can be written for this project that will consider the environmental concerns of many public land- owners.	The purpose and need must address the proposal presented to BLM and cannot include unrelated actions. Refer to Master Response 1: Alternatives for a discussion of the purpose and need, why it is adequate under NEPA, and the purpose of the NEPA analysis to address impacts to various resources. The master response also includes a discussion of how the alternatives were identified pursuant to the requirements of NEPA.
B7-16	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	Gemini Solar is a covered project under Title 41 of Fixing America's Surface Transportation Act (FAST-41). FAST-41 established new coordination and oversight procedures for infrastructure projects being reviewed by Federal agencies. The intent of the act is to improve early coordination between government agencies, increase public transparency, and increase government accountability. If the goal is indeed to increase accountability, public transparency and provide early coordination, this is not in the relevant scope of the project review. This is simply a newer administrative procedure that should not influence the outcome of the project.	The comment is acknowledged. Regardless of the process undertaken to comply with NEPA in terms of timelines and coordination, the NEPA analysis will be used to inform the BLM's decision whether or not to approve or deny the ROW application.
B7-17	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	The Purpose and Need Statement should consider the following state and federal land use plans and laws: The Bureau of Land Management Western Solar Plan which was designated under the Solar Programmatic Environmental Impact Statement. Gemini Solar Project would be located outside of these Designated Leasing Areas or Solar Energy Zones. The Gemini site was not designated as appropriate for solar energy. There are far too many resource conflicts. This should also be an alternative for the DEIS.	The Solar PEIS did not identify the Project area as an exclusion area for solar. The POD, incorporated by reference into the Draft RMPA/EIS explained, "The Project site is within a “variance area” for solar power plant development, as defined in the Record of Decision (ROD) prepared for the Solar PEIS. The ROD does not apply to this Project since the ROW application pre-dates the Solar PEIS." The application for the Project was considered a "pending application" because it was filed within a proposed variance area before the publication of the Supplement to the Draft Solar PEIS on October 28, 2011. Pending applications are not subject to any decisions adopted by the Solar PEIS ROD. The BLM processes pending solar applications consistent with the land use plans in place prior to amendment by the Solar PEIS ROD and any other applicable policies and procedures. Refer to Master Response 1: Alternatives of a discussion of off-site alternatives considered and the Solar PEIS.
B7-18	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo	BLM Management	The BLM chose not to revise the 1998 RMP. As it stands, the RMP protects the wildlife, visual resources, Areas of Critical Environmental Concern, cultural resources and recreational access of the project site and region. In order to approve Gemini Solar, BLM must amend this plan to compromise these resources. For unknown reasons, the BLM Las Vegas Field office cancelled the revision of the Southern Nevada RMP. That revision could have designated new Areas of Critical Environmental Concern in the area. In particular, Clark County nominated California Wash to be designated as an ACEC. The Purpose and Need Statement as it stands now, cannot consider the updates to the RMP because the RMP was cancelled. Yet several thousand commenters have made suggestions.	The Project site is not within an ACEC as identified in the 1998 Las Vegas RMP. The 1998 Las Vegas RMP does not prohibit the application for a ROW on these lands. The NEPA process allows for the evaluation of the proposal on various environmental resources. The impacts on these resources were disclosed in the Draft RMPA/EIS and the numerous supporting documentations. The NEPA analysis will be used to inform the BLM's decision whether or not to approve or deny the ROW application.

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			Basin Conservation Association			The full update to the 1998 Las Vegas RMP is outside the scope of this RMPA/EIS.
B7-19	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Several of the species that will be impacted by Gemini Solar are protected under the Clark County Multi-Species Habitat Conservation Plan. The County has also nominated a major portion of California Wash to be protected as an Area of Critical Environmental Concern.	<p>Impacts to desert tortoise and threecorner milkvetch, which are species identified under the Clark County MSHCP, were addressed in the Draft RMPA/EIS in Section: 3.6 Vegetation and Jurisdictional Waters and Section 3.8: Threatened, Endangered, and Candidate Species. Impacts to these species were acknowledged as adverse, particularly for the Proposed Action and use of traditional methods but reduced to a degree through the mowing alternatives. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS.</p> <p>Construction of the Project would result in a small conflict with approximately 20 acres (8 hectares) of the Clark County Public Lands Proposal (cumulative project #26), which includes a proposal for an ACEC that overlaps with development areas D and E, as described on page 3-12 of the Draft RMPA/EIS and shown in Figure 3.0-1 of Appendix D. The overlap could be a mapping issue due to the scale. The BLM and Clark County would coordinate regarding the final boundaries of the Project and the ACEC to ensure that overlap is eliminated prior to issuance of a ROW to the Applicant.</p>
B7-20	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	Gemini Solar will have a major impact on the threatened desert tortoise. A Recovery Plan for the tortoise was written in 1994 and updated in 2011.	The comment is noted and consistent with the information presented in the Draft RMPA/EIS and the Biological Assessment for the Project, which is included in an appendix to this Final RMPA/EIS.
B7-21	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	<p>The DEIS fails to integrate new information about drastic declines in most Recovery Units of the Mojave Desert tortoise in the last 10 years, including new information about the most efficient genetic connectivity</p> <p>corridors between Critical Habitat Units that include the California Wash area.</p>	Refer to Master Response 2: Mojave Desert Tortoise (under Desert Tortoise Habitat and Densities and Impacts to Connectivity and Gene Flow). The Biological Assessment for the Project provides considerable supplemental information on desert tortoise habitat, connectivity, corridors, ACECs, CHUs, and linkages that expands on the information provided in the Draft RMPA/EIS.
B7-22	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch,	Threatened, Endangered, and Candidate Species	The Moapa dace is listed as Endangered under the federal Endangered Species Act. Water use from California Wash could impact the habitat for this species in the Muddy River. The recovery plan of 1983 should be listed in the Purpose and Need Statement.	The purpose and need for the Project must be related to the application submitted to the BLM. Recovery of the Moapa dace was not part of the Proposed Action. Refer to page 3-84 that states, "[i]ndirect impacts on Moapa dace would not occur, even if the on-site groundwater pumping option is exercised. Refer to Section 3.5: Water Resources for a discussion

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			Western Watersheds Project, and Morongo Basin Conservation Association			of groundwater drawdown. Based on modeling, there would be no groundwater drawdown impacts from Project pumping at the Muddy River or the springs feeding the Muddy River that support Moapa dace." Cumulative effects to Moapa dace were addressed on page 3-85 of the Draft RMPA/EIS.
B7-23	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Air Quality and Climate Change	The facility will be so large that it will have a huge construction carbon footprint. It will crush desert vegetation and biological soil crusts which sequester CO2. It will require several very large fossil fuel powered earth movers to be used for two years.	Refer to the Responses to Comments B6-1 and B6-5. Refer to Section 3.9: Air Quality and Climate Change for a discussion of the carbon emissions from the Project. The analysis quantifies the GHG emissions during construction and operation but presents the offsets of the renewable energy generated. Refer to Table 3.9-4 on page 3-98 of the Draft RMPA/EIS that demonstrated the Project could offset over 19 million metric tons CO2e over the Projects lifespan. It is the equivalent offset of the emissions of over 130,000 passenger vehicles per year, which is a substantial benefit and important means for combating climate change. Loss of carbon stock and sequestration would be minimal compared to the carbon offset by the renewable energy (less than 1 percent over the life of the Project for the Proposed Action and less for the mowing alternatives). Minor edits have been made to the Final RMPA/EIS to present this analysis of minimal effects.
B7-24	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	It will impact and kill Federally Threatened desert tortoises.	Impacts to desert tortoise are addressed in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. The Proposed Action has the greatest potential to impact and result in loss of desert tortoise, as stated on page 3-82, "[d]irect effects include the take of up to the estimated 215 adult tortoise (and the estimated 900 or more juveniles) expected to be found on the Project site during construction; death or injury to tortoises within the construction areas of the gen-tie line routes; and permanent loss of desert tortoise habitat." Mitigation measures identified in Appendix H of the RMPA/EIS would minimize the take of desert tortoise resulting from the Project. The term "take" has been replaced or augmented with clearer language throughout the Final RMPA/EIS to better describe the differences between the action alternatives and the Proposed Action. The alternatives, consistent with NEPA, were devised to address the otherwise substantial and adverse impact on desert tortoise and their habitat. Master Response 2: Mojave Desert Tortoise provides additional information on how impacts to desert tortoise were addressed in the Draft RMPA/EIS.
B7-25	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	It will remove a large swath of habitat for the very rare threecorner milkvetch.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. Impacts to other habitats could still occur. Mowing and drive and crush methods reduce effects by maintaining the soils and likely seed bank.

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B7-26	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Recreation	It will destroy historical resources and impair recreational access to the area.	Refer to Master Response 7: Recreation for more information on how impacts to recreational access were addressed. Impacts to historic resources would be primarily to the OSNHT, as is addressed in Section 3.14: Old Spanish National Historic Trail. Refer to Master Response 5: Old Spanish National Historic Trail for a discussion of impacts to OSNHT and mitigation.
B7-27	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Mitigation and Design Measures	There is simply no way an 11 square mile industrial development can avoid adverse effects to the environment and there is no mitigation that can compensate for the loss.	The Draft RMPA/EIS identified numerous adverse effects, including those for which impacts would remain after application of mitigation. Refer to the "Residual Effects" analysis under each section in Chapter 3 of the Draft RMPA/EIS for the adverse effects that could still occur after mitigation is applied.
B7-28	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	Due to the several alternative locations for this kind of energy, a project with so many adverse impacts falls short of serving the public interest. The project does not meet the standards of the UEPA. There are more current and feasible alternatives, including Distributed Energy resources that we outlined in our scoping comment, but that were unduly rejected for further analysis.	The Applicant will need to apply for a Utility Environmental Protection Act (UEPA) permit and at that time the Nevada PUC will determine the adequacy of their application. Determination of consistency with standards of the UEPA and approval of that application is outside the BLM's jurisdiction. Refer to Master Response 1: Alternatives for a discussion of NEPA Alternatives requirements and the range of alternatives considered for the Project.
B7-29	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	Gemini Solar Project would be built in a high-quality recreation area with a protected visual class.	Refer to Response to Comment B7-3, Master Response 7: Impacts to Recreation and Master Response 6: Change to Visual Resource Management Class and Visual Impacts for a discussion of the Project's impacts on recreation, how it was analyzed in the Draft RMPA/EIS, and the visual impacts of the Project. The current visual class is VRM Class III, which is not a protected class. It allows for a moderate level of visual change.
B7-30	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range	Wildlife, Migratory Birds, and	Bighorn sheep have been seen on the site and the region is important to other wildlife.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and they do not regularly use the

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			Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Special Status Species		site. Bighorn sheep were appropriately addressed in the Draft RMPA/EIS and supporting studies.
B7-31	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Cultural Resources	The cultural resources are valued and protected.	The comment is acknowledged. Cultural resources were addressed in Section 3.12: Cultural Resources of the Draft RMPA/EIS.
B7-32	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	If Interior can cancel Crescent Peak Wind based on these resource conflicts, BLM can most certainly select a No Action Alternative for Gemini Solar due to the large resource conflicts that would be inflicted. By emphasizing these protected resources in the Purpose and Need Statement, BLM could better evaluate their future protection and conservation in the alternatives section.	The purpose and need must address the proposal presented to BLM and cannot include unrelated actions. Refer to Master Response 1: Alternatives for a discussion of the purpose and need and why it is adequate under NEPA and the purpose of the NEPA analysis to address impacts to various resources, as well as how the alternatives were identified pursuant to the requirements of NEPA.
B7-33	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	The conservation groups have reviewed the proposed action and all alternatives. We have concluded that the No Action Alternative is the most sensible for this project due to the great impacts it would cause. The continuing changes to this project and converting it to photovoltaic have not eliminated major conflicts involving hydrology, biological resources, cultural resources, visual resources, air quality and alternatives.	The commenter's preference for the No Action Alternative is noted. The Draft RMPA/EIS identified impacts to hydrology, biological resources, cultural resources, visual resource, air quality, and alternatives. Most impacts can be reduced or minimized through mitigation (such as to hydrology, air quality). Impacts to some resources such as visual impacts, impacts to the OSNHT, and biological impacts would be residual. The BLM must consider the analysis in the Final RMPA/EIS when considering whether to approve or deny the ROW application.
B7-34	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and	Alternatives	But the BLM still needs to review the full range of alternatives. According to the BLM's NEPA Handbook: "For renewable energy rights-of-way, there are many different types of alternatives that are considered by the BLM and the applicant during pre-application activities and that are suggested to the BLM by external parties through scoping and comments on the draft NEPA document. These alternatives typically include: modified site configurations (e.g., varied turbine or solar panel layouts, or different configurations for support and access facilities), modifications to the proposed technology (e.g., wet vs. dry cooling), different technologies (e.g., photovoltaic vs. concentrated solar power), other BLM land locations, non-Federal land locations, reduced project footprint/MW, and phased construction."	Refer to Master Response 1: Alternatives for a description of the alternatives review process under NEPA. Rejected alternatives included other on-site alternatives, alternative configurations, addition of an energy corridor, and several off-site options. Master Response 1: Alternatives provides additional information on the alternative evaluation process.

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			Morongo Basin Conservation Association			
B7-35	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	The BLM failed to review a reduced footprint alternative for Gemini Solar. At the public meetings, BLM told us that the all mowing alternative satisfies the requirement to review a reduced footprint alternative. We believe this is an oversight and that a Supplemental Environmental Impact Statement should be prepared to cover these categories.	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered. NEPA does not require a reduced project footprint alternative (40 CFR 1502.14). The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA. MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
B7-36	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	As the BLM has pointed out in public meetings, mowing vegetation on 7,100 acres will still create great impacts. Because there are no peer reviewed studies concerning the success of vegetation mowing relating to the desert tortoise, it only makes sense to try this experiment on a smaller footprint.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
B7-37	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Air Quality and Climate Change	Vegetation mowing creates a large amount of fugitive dust.	Fugitive dust was quantified in Section 3.9: Air Quality and Climate Change of the Draft RMPA/EIS for construction and operation, including mowing. The All Mowing Alternative results in less fugitive dust generation than the Proposed Action. MM AQ-1 includes numerous emissions controls to reduce fugitive dust and a Dust Control and Air Quality Plan would be required. Refer also to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust regarding the requirements for dust control.
B7-38	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Vegetation mowing uses vehicles that weighs tens of thousands of pounds running over multiple habitats.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized. Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation

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						does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities . The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS.
B7-39	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Vegetation mowing will destroy habitats for rare plants including over 700 acres or one quarter of the habitat for threecorner milkvetch, one of Nevada's rarest plants.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
B7-40	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	Vegetation mowing on 11 square miles will directly kill many thousands of plants and animals. These include kangaroo rats, desert iguanas, horned lizards, badgers, kit foxes, bird nests, countless insect species, tarantulas, - the list is too big.	Direct impacts to general wildlife were addressed on page 3-73 of the Draft RMPA/EIS as follows, "[d]irect effects on general and special status, non-listed wildlife species (such as through injury or mortality) may occur from contact with construction and maintenance equipment and/or Project facilities, similar to the Proposed Action. MMs WILD-2 through WILD-5 would be implemented to protect wildlife during project construction and O&M." Additionally, MM WILD-7: Bird and Bat Conservation Strategy and Requirements and MM WILD-8: Nesting Bird Avoidance and Minimization would be implemented. MMs WILD-2 through WILD-5 and MMs WILD-7 and WILD-8 are found in Appendix H.
B7-41	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Vegetation mowing disturbs stable soils and proliferates invasive weeds. This can be seen on the Pahrump Solar Project.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized. Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities . The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS.

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						<p>A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion, as described under Master Response 2: Mojave Desert Tortoise (under Scientific Study). A summary of effects from spread of non-native plants on desert tortoise is also included in Master Response 2: Mojave Desert Tortoise (under Weeds).</p> <p>The state of invasive weeds on the Pahrump project was not substantiated by the commenter. There do not appear to be reports available on weed monitoring for that site. The specific mitigation identified for the Project should reduce weed impacts in mowed areas.</p>
B7-42	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	Vegetation mowing and routine maintenance compacts soils and creates problems for burrowing animals.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-going Operations and Maintenance) for information on how construction would occur in the mowed areas. Burrows would be flagged and avoided, as much as possible.
B7-43	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Vegetation mowing will disturb aeolian habitat and there is no prediction on how long that would take to recover.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how the Project's impacts on threecorner milkvetch, including aeolian habitats were addressed in the Draft RMPA/EIS.
B7-44	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	Loud machines could deafen animals that are not crushed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
B7-45	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western	Vegetation and Jurisdictional Waters	The vehicles used for vegetation mowing weigh tens of thousands of pounds, far more than the heaviest species out there.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized.

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			Watersheds Project, and Morongo Basin Conservation Association			Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities . The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS.
B7-46	9/7/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	While Off Highway Vehicle Recreation is different from vegetation mowing, there will be similar impacts. Afterall, there are no roads where the mowers will be used.	Refer to Figure 2-19 and Figure 2-22 of Appendix H of the Draft RMPA/EIS for the location of roads within the All Mowing and Hybrid Alternatives. The exact locations of the proposed roads could change during final engineering but would generally be the width and locations identified in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion regarding impacts resulting from mowing during construction and operation of the Project.
B7-47	9/8/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Desert pavement, biological soil crusts, native annual plants, native perennial forbs, and the root systems of many shrubs would be significantly damaged, disturbed, or destroyed by these activities, and lasting effects would occur for decades. Animal burrows would be collapsed and small animal species crushed or scared away from their territories and cover.	The resource impacts identified by the commenter were addressed and disclosed in the Draft RMPA/EIS in Section 3.6: Vegetation and Jurisdictional Waters and Section 3.7: Wildlife, Migratory Birds, and Special Status Species. Mitigation identified in Appendix H reduces these impacts, but residual effects remain, especially for the Proposed Action and in traditional development areas of the Hybrid Alternative. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion on how desert pavement and biocrust impacts were addressed in the Draft RMPA/EIS, and associated mitigation.
B7-48	9/9/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	In 2012, the Western Solar Plan approved 19 Solar Energy Zones or Designated Leasing Areas. While this review had many conflicts, the idea was to put the solar energy where it has the least impacts. These zones avoid the high concentrations of areas with biological and cultural resources. The BLM rejects this alternative because the Solar Energy Zones (other BLM lands) are not in the region. Again, BLM is basing the DEIS on what the applicant wants, not the best possible solution for the situation. It is not the responsibility of the BLM, the public or all of the sensitive resources on this site to accommodate Solar Partners LLC. This is a private company. A broader Purpose and Need Statement would allow the BLM to consider a more reasonable range of alternatives.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. No other solar energy zones are located in Clark County. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process. Master Response 1: Alternatives (under the Off-Site Alternatives) describes this Solar PEIS's relevancy to the Project.
B7-49	9/10/2019	Emmerich, Kevin	Conservation Groups: Basin and	Alternatives	Reduced Footprint Alternative: This would satisfy BLM's requirement to review the full range of alternatives and could also reduce	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered. NEPA does not require a reduced project footprint

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			Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association		impacts to the Old Spanish Trail, visual resources, air quality, desert tortoise and all biological resources. BLM could also avoid the entire threecorner milkvetch habitat by considering a reduced footprint alternative. It is clearly unreasonable to not consider this. A supplemental EIS should be written for this reason alone.	alternative (40 CFR 1502.14). The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA. The OSNHT corridor encompasses the entire valley of the 44,000-acre (17,806-hectare) application area and, therefore, cannot be avoided with an alternative. Master Response 1: Alternatives provides additional information on the alternative evaluation process. MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
B7-50	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	Conservation Alternative/Resource Management Plan (RMP) Revision: The project area could be amended to create a Conservation Alternative for the region.	Refer to Master Response 1: Alternatives for a discussion of the purpose and need and why it is adequate under NEPA. A conservation alternative does not meet the purpose and need. BLM will decide to approve or deny the application based on the NEPA analysis and other considerations. Creation of an RMP amendment to create a conservation area is outside the scope of this RMPA/EIS.
B7-51	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	Or better yet, the project review could be placed on hold until a revision of the 1998 RMP can be made. Alternative 2 in the cancelled RMP revision for example did identify Lands With Wilderness Characteristics next to the Muddy Mountains Wilderness Area and right next to the project site. Alternative 2 also proposed to upgrade the VRM Classes in the area to VRM Class I and VRM Class II. Alternative 2 would have greatly expanded the Extensive Recreation Management Area around the Muddy Mountains and the Project Site. Alternative 2 would have made the entire Gemini Site an Avoidance and Exclusion Area for large scale solar projects. Gemini would not have been able to be built under this alternative.	The RMP update Alternatives identified were never finalized. The current applicable RMP is the 1998 Las Vegas RMP. The full update to the 1998 Las Vegas RMPA is outside the scope of this Final RMPA/EIS.
B7-52	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	Delaying this review would allow for more evaluation of the cancelled RPM proposals. The BLM has never said it would not start to revise the RMP again. But if this review must go forward, we request BLM review a Conservation Alternative for the project which would not only reject the solar application, but amend the 1998 RMP to avoid and exclude large-scale solar on the site to protect resources.	Under SO 3355 and the FAST-41 process, the BLM has limited time to respond to the ROW application. The previous RMP update was never finalized. The current applicable RMP is the 1998 Las Vegas RMP, which does not identify the area as being in a conservation area. The full update to the 1998 Las Vegas RMP is outside the scope of this RMPA/EIS.
B7-53	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and	Alternatives	The BLM did not adequately respond to the Basin and Range Watch request for an Area of Critical Environmental Concern/Conservation/No Project Alternative in the scoping comments	Refer to Master Response 1: Alternatives for an explanation as to why an ACEC or conservation alternative does not meet the purpose and need and,

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			Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association			therefore, was not addressed in the EIS. A No Action Alternative was included in the Draft RMPA/EIS on page 2-10.
B7-54	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	The BLM could easily select a No Action Alternative for Gemini based on existing projects that would only have to add ten acres to incorporate storage. The batteries will have to be cooled in the summer on the Gemini site. Temperatures can easily top 115 degrees out there and batteries will need to be cooled long after sunset. This would be a parasitic load and partially defeats the reason for the project. Storage facilities would not even have to be on the site and could easily be put closer to the point of use.	A battery storage-only project would not meet Project objectives. The Project includes a climate-controlled battery system (page 2-3 of the Draft RMPA/EIS), to address the temperature control issues noted by the commenter. The cooling is factored into the design and output of the system. The acreage required to install the battery system across the Project site has also been factored into the overall impact areas for the Project. The suggestion that the Project battery system be located off-site or at another solar facility would not be feasible to support the energy storage needs of this Project.
B7-55	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	The BLM rejected our long comments on distributed generation for the scoping phase of the project. BLM responded to very few of the issues we raised.	Refer to Master Response 1: Alternatives for the alternatives review process under NEPA, why distributed generation was rejected, and the alternatives screening criteria. Relevant comments were addressed in the NEPA analysis, where appropriate.
B7-56	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	There was never a mandate to develop California Wash like this and BLM simply did not do their homework on distributed generation. The BLM rejects DG because they say DG facilities can only generate ten megawatts. But the goal is to use solar energy, so BLM could simply do math and determine that 65 ten megawatt sites could fulfill this need.	Refer to Master Response 1: Alternatives for the alternatives review process under NEPA and the considered alternatives and requirements. Distributed generation solar also was rejected from detailed consideration because such systems typically generate less than 10-MW of energy. Distributed generation is a different type of facility and does not meet the purpose and need.
B7-57	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds	NEPA and Decision Process	We request that the BLM reconsiders our long scoping comments on DG in a supplemental EIS.	Refer to Response to Comment B7-8 and the Scoping Report for the Project. Public input received through official scoping comments were analyzed and summarized to develop the final set of planning issues that were addressed in the Draft RMPA/EIS.

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			Project, and Morongo Basin Conservation Association			
B7-58	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	These mitigation measures are not “solutions” but rather experiments, and may not solve the continuing decline of rare and threatened species.	The commenter is not specific as to what mitigation measures they believe are not solutions and, therefore, a specific response cannot be provided. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing alternatives as a new approach to reduce impacts to desert tortoise, vegetation, rare plants, and other resources.
B7-59	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	<p>The BLM did not adequately respond to the Basin and Range Watch request for an Area of Critical Environmental Concern/Conservation/No Project Alternative in the scoping comments: Basin and Range Watch and Western Watersheds Project requested an alternative that was for an ACEC/Conservation/No Project Alternative. Two Areas of Critical Environmental Concern (ACEC) were nominated for this region under the revision of the Southern Nevada Resource Management Plan. These ACEC alternative were being considered under Alternative 2 for the Southern Nevada Resource Management Plan.</p> <p>The BLM would have to evaluate an additional Land Use Plan amendment in the DEIS to consider this alternative. An ACEC could be viewed as an action alternative if provisions are made to close illegal roads, eliminate invasive plants, or construct interpretive signage at the ACEC.</p> <p>The first nomination is the California Wash Area of Critical Environmental Concern. It would designate over 11,000 acres as an ACEC to protect cultural and historic values as well as vegetation communities. It would also be instrumental in protecting desert tortoise populations. The nomination could overlap with the solar project.</p> <p>The second nomination that partially overlaps with the south side if the solar proposal is the Bitter Springs ACEC. This is a 61,000-acre nomination designed to protect bighorn sheep, scenic values and vegetation communities. We would also like to request that the Visual VRM Classes be upgraded to VRM I and VRM II to highlight this alternative.</p> <p>This alternative should be separate from, and in addition to, the “no action” alternative required under NEPA, which would simply deny the right-of-way requested by the developer. This separate action alternative would provide BLM the efficiency of using a single EIS to determine whether to designate the area where the Project is proposed for additional protection as the optimal use of the area for the benefit of the public and the environment</p>	The suggested ACECs or conservation alternatives are not considered because they do not meet the purpose and need. The BLM's action is to respond to the ROW application. The actions suggested by the commenter would come from an RMP update and not a ROW application. The full update to the 1998 Las Vegas RMPA is outside the scope of this RMPA/EIS. A No Action Alternative was included in the Draft RMPA/EIS on page 2-10.
B7-60	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	The Project would be built in a high conflict Visual Resource area. Although the lands directly impacted would be in the VRM III Class Objective, the massive size of the project would impact other conservation and specially designated areas in the region including the Muddy Mountains Wilderness Area, the Bitter Springs Backcountry Byway, California Wash, The Old Spanish Trail and as far away as the Desert National Wildlife Refuge. Because of this, these resources should be reviewed for Visual Impacts under VRM II and even VRM I standards.	Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for an explanation of how the visual assessment was performed and each of the potential viewers. Impacts to viewers were assessed in accordance with the VRM requirements in the Visual Resources Technical Report and Draft RMPA/EIS.

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B7-61	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	But as BLM is aware, the project fails to even meet VRM Class III objectives: VRM Class III Objective: To partially retain the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. The BLM has chosen to cancel their update and environmental review on the Las Vegas Resource Management Plan. BLM must now downgrade the Visual Class of the region to VRMIV knowing that this project will greatly compromise the visual quality of the landscape. Therefore, the BLM should update the RMP before reviewing Gemini Solar.	The full update to the 1998 Las Vegas RMP is outside the scope of this Final RMPA/EIS. The 1998 Las Vegas RMP is the current approved RMP that the Project is assessed under. The amendment proposed as part of the Project would be only to the VRM Class in the Project area, changing it from a Class III to a Class IV to be compatible with the solar development and particularly the visibility of the proposed transmission structures. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for more information on the change to the VRM class.
B7-62	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	Both NEPA and FLPMA recommend that Visual Resource Management be decided on the RMP level. The Action Alternatives of the cancelled RMP prosed to upgrade the Visual Class of the region.	The full update to the 1998 Las Vegas RMP is outside the scope of this Final RMPA/EIS. The 1998 Las Vegas RMP is the current approved RMP that the Project is assessed under. The amendment proposed as part of the Project would be only to the VRM Class in the Project area, changing it from a Class III to a Class IV to be compatible with the solar development and particularly the visibility of the proposed transmission structures. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for more information on the change to the VRM class.
B7-63	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	On a cumulative level, there are distant visual impacts including transmission lines, Highway 15and the Moapa Solar Project. But the topography of the California Wash area is a large, unbroken alluvial fan or bajada. Even with distant visual disturbances, California Wash is remote and vast and if left alone, maintains a wild, undeveloped appearance.	The comment is acknowledged. KOPs were selected in the Visual Resources Technical Report and the existing setting is described consistent with the commenter's observation. Refer to Section 3.2.3 of the Visual Resources Technical Report, starting on page 3-13, for a description of each KOP considered.
B7-64	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	The visual impact analysis of the Gemini Solar DEIS and Glint and Glare Report is simply incomplete due to the fact that the proponent has not chosen which photovoltaic technology would be used. Would they be Monocrystalline, Polycrystalline, Bi-facial or Thin-film? Since BLM is not saying, we are wondering if thin-film will be chosen. At the public meetings for the Draft Environmental Impact Statement, several people from the company First Solar were attending. First Solar builds large photovoltaic projects. They always use highly reflective thin film panels. If First Solar builds Gemini Solar, it is likely that large, flashing glints would occur at several locations. This would be disruptive to recreational, wilderness and scenic values. It will also present hazards for any aircraft flying over this project. We can only speculate about this because BLM will not predetermine what PV technology will be used.	<p>The simulations and visual impact analyses are based more on the bulk size of the facilities and the type of surface would not have an impact on the simulations or the conclusions. The Glint and Glare Study incorporated by reference into the Draft RMPA/EIS is adequate as the analysis was performed assuming the worst-case scenario. Refer to page 3-1 of the Glint and Glare study where it states, "[a]t this stage of the planning process, the exact make and model of the PV panel has not been determined. Therefore, this analysis assumed a worst-case scenario and inputted smooth glass without ARC, which would have the greatest reflectivity." Glint and glare was assessed for impacts to recreation, motor vehicles, and aircraft and is adequate and would be minor.</p> <p>The public meetings were open to the public with the right for anyone to attend, including other solar companies. A link between their attendance and the use of thin film technology on this Project cannot be made.</p>

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B7-65	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	The Glint and Glare Report analyzes 30 Observation points. It concludes that most of them would not produce these glint and glare impacts. But since we don't know what technology would be used and the panels could use single axis-tracking, it is very difficult to determine the potential impacts during all times of year.	Refer to Response to Comment B7-64 for a discussion of why the Glint and Glare Study was adequate. Single axis trackers would be used, as is stated in Chapter 2 (page 2-3 of the Draft RMPA/EIS) and page 3-1 of the Glint and Glare Study.
B7-66	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	The Key Observation Point (KOP) simulations in the DEIS are inadequate and minimize the visual impacts of this project. Again, we must point out that the project would be 11 square miles. All of BLM and Panorama's 40 KOP's are inadequate and we believe were intentionally designed to minimize these large visual impacts. Only KOP 39 gives a good example of what the project may look like.	No reasons for why the commenter believes that the KOPs were inadequate are provided. Refer to Section 3.2.1.3 on page 3-12 of the Visual Resources Technical Report for a discussion of how KOPs were selected and the screening criteria. The reports states, "[t]he multi-criterion decision analysis involved selecting scale-based numeric values for the cKOPs across five different landscape-specific criteria, including proximity, perspective, duration, visibility, viewer sensitivity, and number of viewers. The definitions and values for the criteria are explained in Appendix B. All the criteria and the rating values are specific to the surrounding landscape." The KOPs were selected in consultation with and following the requirements of BLM Manual 8431 and are adequate. The methods for preparation of photo simulations is also provided in Section 4.1 of the Visual Resources Technical Report on page 4-1, and is consistent with standard practice and meets all BLM requirements.
B7-67	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	Some good examples of this are KOP 19. This KOP should have shown the solar project in much better contrast. The photo is faded and one must look closely to see the solar project simulation. This is not reality. The project would be much more visible from this view. KOP 19 appears to intentionally minimize the view of Gemini Solar from the Muddy Mountains. A simulation on a more standard clear day would show sky reflection better.	Refer to Response to Comment B7-66. Required and acceptable methodology per BLM Manual 8431 was implemented to generate simulations.
B7-68	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	Equally, the KOP simulations minimize the view of what a mowed vegetation site would actually look like. The BLM did not provide a good KOP of the site after mowing and before solar panels are installed. This would show a much better contrast.	Solar panels would be installed as areas are prepped and mowed. The suggested simulation does not represent a realistic scenario and, therefore, should not be simulated. Construction impacts are described but not simulated since these impacts would be relatively short in duration.

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B7-69	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	We believe that the KOP simulations could and should use existing solar projects as references. If that were done, BLM would have far more accurate simulations of the actual impacts to the project site.	Refer to Response to Comment B7-66. The methodologies used followed BLM Manual 8431 and the standards of practice for visual simulation.
B7-70	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	Dark skies will also be impacted by construction activity and on -site security.	Nighttime lighting, including construction lighting, was addressed on page 3-108 of the Draft RMPA/EIS, where it states, "[n]ighttime construction activities would require illumination to meet state and federal worker safety requirements. Nighttime construction lighting could deteriorate stargazing and night sky observation conditions for recreationalists and motorists in the Project vicinity. To the extent possible, nighttime construction lighting would be limited to active work areas and when necessary for safety and security and would be directed downward and shielded from public view so as not to impact dark skies. MM VR-3 would further reduce impacts from nighttime lighting by requiring the development and implementation of a Lighting Plan."
B7-71	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	Vegetation mowing would require solar panels to stand higher off the ground which would result in bigger visual impacts. Allowing vegetation growth at 24 inches under 15-foot solar panels would do little to minimize visual impacts.	Panels could be up to 3 feet (0.9 meter) taller in mowed areas. This difference was analyzed in the Draft RMPA/EIS. See page 3-115, where it states: "[w]here mowing occurs for site development under the All Mowing Alternative, solar panels would be up to 3 feet (0.9 meter) taller than in areas cleared using traditional methods. Slightly taller solar panels were included in the visual simulation model for the All Mowing Alternative to determine the effect on contrast. Minor differences can be detected by comparing simulations at the closest KOPs (KOPs 8, 34, 39, 40), but the slightly taller solar panels would not change the contrast rating as they would not alter the contrast, which typically comes from color or form."
B7-72	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Visual Resources	A Supplemental EIS should provide better photo simulations of this project site. More simulations should be created including some from the Muddy Mountains, a dark skies simulation and one from the air which would cover scenic air tours.	Refer to Response to Comment B7-66. The methodologies used followed BLM Manual 8431 and the standards of practice for visual simulation. Additional simulations as suggested by the commenter are not appropriate. KOP 19 Colorock Quarry Road is located at the border of the Muddy Mountains Wilderness Area. As discussed in Table 3.10-1 of the Draft RMPA/EIS, the degree of visual contrast created by the Project as viewed from KOP 19 would be weak. Scenic air tours are not an accepted or typical KOP, nor is a simulation of the dark sky.
B7-73	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range	Alternatives	A Conservation Alternative that upgrades the Visual Class to VRM Class I and II for the project site should be considered. A conservation designation could be considered an Action Alternative if enhancements such as more law enforcement patrols or educational signs for tortoise protection are made.	The suggested conservation alternative is not considered because it does not meet the purpose and need. The BLM's action is to respond to the utility application. The Applicant did not propose increased law enforcement or

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			Watch, Western Watersheds Project, and Morongo Basin Conservation Association			educational signs or tortoise protection. Refer to Master Response 1: Alternatives for the discussion of appropriate NEPA alternatives.
B7-74	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	Cancelling the RMP review also eliminates consideration of future LWC designations in the area. This should be reviewed in a Supplemental EIS.	The full update to the 1998 Las Vegas RMP is outside the scope of this RMPA/EIS. The 1998 Las Vegas RMP is the current approved RMP that the Project is assessed against. The amendment proposed as part of the Project would be only to the VRM Class in the Project area, to change it from a Class III to a Class IV to be compatible with the solar development and particularly the visibility of the proposed transmission structure. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for more information on the change to the VRM class.
B7-75	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	<p>The DEIS states that the project site does not meet the conditions to qualify as Lands with Wilderness Characteristics. From BLM’s own guidelines: For an area to qualify as lands with wilderness characteristics, it must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. It may also possess supplemental values.</p> <p>The area is very large. The project site alone is about 11 square miles and located in an undeveloped area spanning over 30,000 acres which also covers the solitude. As far as naturalness goes, the area has very pristine Mojave Desert habitats with very little disturbance. BLM’s own biology reports document a great biodiversity on the site and appearance-wise, it is a vast undeveloped bajada with sweeping mountain views. The region has great recreational value and is part of the experience of visiting Valley of Fire State Park. BLM obviously felt differently about the region in 2014 when they considered LWC for the region in Alternative 2 of the RMP.</p>	"Lands with Wilderness Characteristics" is a specific land designation under FLPMA. The regulations are described on page 3-4 of the Land Use and Corridor Study, incorporated by reference into the Draft RMPA/EIS. As stated on page 3-11 of the Land Use and Corridor Study, "Based on the BLM’s inventory, the closest lands to the Project with wilderness characteristics are surrounded by the Muddy Mountains Wilderness Area (Figure 5)." The BLM determined the Project area was not of sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation, or other supplemental values to qualify as Lands with Wilderness Characteristics. Page 3-8 of the Draft RMPA/EIS also stated that, "[t]he most recent inventory for Land with Wilderness Characteristics within all BLM-managed land in Southern Nevada was completed by BLM in 2010 and 2011. The Project site does not meet the conditions for consideration as possessing wilderness characteristics."
B7-76	9/7/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	<p>The DEIS states: No adverse impacts on wildlife migration that could affect Native American religious concerns are expected to occur. A well-established herd of bighorn sheep is present in the Muddy Mountains and Valley of Fire region; however, the bighorn sheep do not regularly use the Project site, and adverse effects on their migration patterns are not expected. Desert tortoise is often mentioned by the Moapa Band of Paiutes as a species that should be protected and was once a food source (Stoffle, R.W., and H.F. Dobyns 1983).</p> <p>Bighorn sheep sign was found on the project site during biological surveys. If bighorn sign is found somewhere, bighorn use the site. Lower bajadas are often used by bighorn during winter months.</p> <p>As BLM mentions, their mowing alternative was designed partly to preserve desert tortoise connectivity which is a kind of wildlife migration.</p>	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and they do not regularly use the site.
B7-77	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch,	Visual Resources	Even with mitigation and a mowing alternative, it would be impossible for the BLM to retain the essential physical features that enable it to convey its historic identity. Hiding the panels with an Earth-tone painted fence will not solve this issue. There is no mitigation that can do this.	The Draft RMPA/EIS acknowledged in several sections (e.g. Section 3.10: Visual Resources and Section 3.14: Old Spanish National Historic Trail) that the Project would have visual impacts and would alter the existing setting.

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			Western Watersheds Project, and Morongo Basin Conservation Association			
B7-78	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	The original application for Gemini Solar is over 44,000 acres and BLM has provided no alternative that would either move the project to a more distant part of the original application. BLM has not provided a reduced footprint alternative and most importantly, BLM has not provided an off -site alternative.	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered, including other areas of the 44,000-acre (17,806-hectare) application area and off-site options. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.
B7-79	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Old Spanish National Historic Trail	It appears that the BLM would prefer to see the trail impacted before considering more reasonable alternatives. The Old Spanish Trial was Congressionally designated and put in the jurisdiction of the National Park Service. It is disappointing that BLM has not taken more measures to protect it from this kind of development.	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered. The OSNHT corridor encompasses the entire valley of the 44,000-acre (17,806-hectare) application area and, therefore, cannot be avoided. The impacts to the OSNHT were found to result in "substantial interference." Refer to Master Response 5: Old Spanish National Historic Trail for further explanation, including mitigation.
B7-80	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Water Resources	While the two alternatives that use vegetation mowing are being planned to have a more minimal impact on the biological resources of the area, it should be noted that the configuration of the solar panels will drastically alter runoff patterns. During monsoons, heavy rain will channel off the solar panels. The erosion patterns will depend on which way the axis tracking is pointing the solar panels. This could cause great erosion and possible help encourage the growth of non-native and invasive plants.	The ultimate flow paths of stormwater are determined by gravity and the ground surface and not the angle of the panel (or the "way the axis tracking is pointed" as noted by the commenter). Stormwater flows northward in this area, towards the Muddy River, over 13 miles (21 kilometers) away. In high winds and storm events, the panels can also revert to a horizontal position to minimize damage. Drainage patterns were modeled and are shown in the Drainage Report, which was included by reference in Draft RMPA/EIS. Erosion is addressed in the Drainage Study and from stormwater flowing overland was addressed on page 3-22 of the Draft RMPA/EIS. The analysis states, "[i]ncreased erosion on the Project site from stormwater overland flows could result in increased deposition of fine-grained sediments into the surrounding washes, which would likely flow downstream and off site before settling out of the washes. Because no uses such as agriculture or built structures are located downstream for up to 13 miles (21 kilometers), periodic increases in fine-grained sediment loads and deposition are not expected to have adverse effects. Deposition of fine sand could have beneficial effects on sensitive plant species, such as threecorner milkvetch. The washes in the region generally move large quantities of all sizes of sediment as part of the natural desert processes, changing course and depositing soils during large storm events. Adverse

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						<p>effects from increases in transport of fine-grained sediment are not expected."</p> <p>As stated on page 3-36, "MM GS-1 in Section 3.3: Geology, Soils, and Mineral Resources requires erosion control and bank stabilization devices to be installed in and around on-site and off-site washes (subject to appropriate permits). The measure also requires routine site inspections to identify and repair areas of erosion such as deep rills and gullies in the panel arrays and to maintain, change, or add additional erosion control features if needed (in accordance with required permits). Mitigation would minimize the adverse impacts of erosion and scour from increased site flows and flooding across the solar facility." With erosion control, and the various weed management measures included in MM VG-1 in Appendix H, stormwater runoff is not anticipated to encourage growth of non-native, invasive plants.</p>
B7-81	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Water Resources	Construction would use 2,000 acre-feet and 20 acre-feet per year would be used for maintenance. While the BLM models do determine that this will not cause a long-term draw down, through Interim Order #1303, the State Engineer has placed a moratorium on new water appropriations in the flow system until a sustainable yield amount can be determined in Basin218 and California Wash. The cumulative scenario of future development in the region makes this a long-term threat to water resources. This would impact riparian areas, local water supply, and the Moapa dace.	The cumulative impacts of groundwater usage were addressed on page 3-40 of the Draft RMPA/EIS for the Proposed Action, and impacts would be similar or less for the All Mowing Alternative and the Hybrid Alternative. The section states, "[p]er Interim Order #1303, the State Engineer has placed a moratorium on new water appropriations in the flow system until a sustainable yield amount can be determined. The other projects might also obtain a temporary Change in Use of existing appropriations. The process for obtaining the temporary Change in Use would include consideration of cumulative amounts of groundwater withdrawn from the flow system. Temporary Change in Use authorization are typically granted for one year at a time, and construction water durations are usually short, reducing the potential for large overlaps in construction water needs. The USFWS also tracks any groundwater pumping under a 2006 Biological Opinion (1-5-05-FW-536) in the California Wash Basin (as well as other basins in the flow system) to ensure that water at the Warm Springs gauge flowing into the Muddy River does not flow below 2.7 cfs (0.08 cms). These controls would minimize the potential for cumulative impacts. If cumulative effects caused flows to fall below 2.7 cfs (0.08 cms), a reduction in pumping across multiple projects might be required. The Applicant would have to secure alternative sources of water, such as through the purchase of water trucked to the Project site, or would have to modify construction to meet dust control requirements. The Project's operational water needs would be minimal and not likely to contribute to a cumulative impact."
B7-82	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	All desert pavement should be strictly avoided to prevent disturbance and loss of sensitive resources.	Impacts to desert pavement were addressed in Section 3.6: Vegetation and Jurisdictional Waters. Impacts are quantified for the Proposed Action, All Mowing Alternative, and Hybrid Alternative. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for additional information on impacts, mitigation, and differences between the alternatives with respect to desert pavement/biocrust. Total avoidance is likely not feasible under the Action Alternatives. The Draft RMPA/EIS acknowledged loss of biocrust/desert pavement as adverse.

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B7-83	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Caliche is also present commonly on the project site, and post pile-driving could break up these caliche layers that are important for tortoise burrows, as well as possibly for groundwater retention. More analysis needs to be done concerning the impacts of pile-driving on caliche soils, and the very long-lasting impacts this will have.	<p>Shallow groundwater is not present in the Project area, as stated on page 3-20 of the Draft RMPA/EIS. Some stormwater could perch over caliche layers but in general, rainfall levels are low and evapotranspiration rates are extremely high and as such, areas of perched groundwater were not readily observed on the Project site.</p> <p>Most caliche tortoise burrows are located along the banks of the larger washes, which would be avoided by the Project. Page 5 of the Preliminary Geotechnical Evaluation, incorporated by reference into the Draft RMPA/EIS, identifies the locations where caliche was found, "This naturally cemented soil is located at the surface in the southern portion of Site B, and in portions of Site A. Calcrete/caliche is also noted near the southern portion of Site D. These hard to very hard soil layers are found on the ground surface and along natural wash embankments where they typically form terrace ledges." The Preliminary Geotechnical Evaluation also includes a table that summarizes the depth to caliche layers, (see Table 4 on page 11 of the report). Most caliche layers were not encountered until 5 to 10 feet below the ground surface, although one boring encountered it 3 feet below the surface. When subsurface, tortoise cannot burrow through these layers, which is why the burrowing is predominantly found in the banks of the major washes that provide a large cut through the layer, allowing tortoise to burrow under the layer.</p> <p>Piles are approximately 4 inches by 6 inches (10 centimeters by 15 centimeters) in size and are spaced approximately 21 feet (6.4 meters) apart. While some caliche could be damaged by the placement of piles, given the small size of the piles, the area of effect would be relatively small. Since the largest washes would be avoided and the panels are placed several hundred feet from these wash banks the likelihood of significant damage to tortoise burrows from post installation in caliche is low. Some edits have been made to the Final RMPA/EIS to address these concerns.</p>
B7-84	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Sandy soils and sand-transport corridors could be greatly disrupted and disturbed. The EIS at 3-22 says: "Native vegetation, however, would not be expected to regrow on the Project site beneath the panels in most areas."	<p>The comment is correct for the Proposed Action in areas of traditional development, where the soils would be deeply disked and roots and seed banks of native species destroyed, and therefore, could not regrow. The mowing alternatives avoid this impact as the native vegetation, its roots, and seedbank is left in place. Vegetation would continue to grow under the panels but would be trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area), to allow safe operation of the panels.</p> <p>Sand transport could increase under the Proposed Action, and was addressed on page 3-22 of the Draft RMPA/EIS, where it states, "Increased erosion on the Project site from stormwater overland flows could result in increased deposition of fine-grained sediments into the surrounding washes, which would likely flow downstream and off site before settling out of the washes. Because no uses such as agriculture or built structures are located downstream for up to 13 miles (21 kilometers), periodic increases in fine-grained sediment loads and deposition are not expected to have adverse effects. Deposition of fine sand could have beneficial effects on sensitive plant species, such as threecorner milkvetch. The washes in the region generally move large quantities of all sizes of sediment as part of the natural desert processes, changing course and depositing soils during large storm events. Adverse effects from increases in transport of fine-grained</p>

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						sediment are not expected. Note that Section 3.5: Water Resources addresses changes in the volumes of water runoff (including over Valley of Fire Road), which would also increase given the large increase in land cleared of vegetation."
B7-85	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	We disagree that large construction sites with industrial power plant installations will at all benefit the rare threecorner milkvetch. Desert disturbance, crushing, compression, and erosion will potentially allow increased deflation of sediments with strong winds, and removal of sand habitats for arenophilous plant species.	The Draft RMPA/EIS acknowledged that the loss of habitat for threecorner milkvetch for the Proposed Action and Hybrid Alternative would be adverse and not "a benefit." MM VG-2 in Appendix H requires that only drive and crush be used in modeled milkvetch habitat (refer to page 3-62 of the Draft RMPA/EIS). Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provides additional information on how threecorner milkvetch impacts were addressed and mitigation.
B7-86	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Air Quality and Climate Change	The EIS goes on to contradict itself” “Wind-driven erosion would occur across the bare soils in all solar development areas where soils are exposed. MM Air Quality (AQ)-1, from Section 3.9: Air Quality and Climate Change, would require soil stabilization measures to minimize air quality impacts from windblown dust. Transport of windblown sediments would be adverse where it impacts air quality.” (id.)	The quoted statement is an accurate statement for the Proposed Action and traditional development areas. Bare soils are more prone to wind erosion. The Draft RMPA/EIS identifies that impacts to threecorner milkvetch habitat are adverse within the development areas, particularly for traditional development areas. On-site impacts for the Hybrid Alternative are reduced through MM VG-2 in Appendix H, which requires that only drive and crush be used in modeled milkvetch habitat (refer to page 3-62 of the Draft RMPA/EIS). Control of excess on-site windblown sand over baseline conditions from denuded soils would not affect off-site and downstream windblown sand, such as in threecorner milkvetch habitat that is likely present on tribal land to the north of the Project.
B7-87	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Chain-link fences are known to catch wind-blown sand and block sand transport corridors. Wind stabilization measures should be detailed and their impacts analyzed, as sand could be cut off to threecorner milkvetch populations on site and downwind of the project site.	The openings in the chain-link fencing is wide enough for sand to pass through. Some chain link fences can include sediment control mesh behind them, which is not proposed for this Project. Sand sources for threecorner milkvetch habitat is primarily transported down the major washes during storm events versus overland sand deposition from windblown sand moving over greater distances. The Project would likely increase downstream fine sand transport through the washes during storm events due to reduced cover on the Project site for the Proposed Action, in particular. On-site dust control measures are meant to reduce dust to existing or baseline levels and would not significantly impact downstream sand deposition for threecorner milkvetch habitat. The need for dust control would be reduced for the mowing alternatives.
B7-88	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin	Vegetation and Jurisdictional Waters	This is an explosion of Sahara mustard waiting to happen, as the construction disturbance opens up newly disturbed ground. This is a dire impact to threecorner milkvetch. Simply applying herbicides to try to control these noxious weeds may result in elimination of native plants as well, including the milkvetches. Only avoidance of these areas will reduce impacts.	The potential for spread of invasive weeds associated with the Project is analyzed in Section 3.6: Vegetation and Jurisdictional Waters of the Draft RMPA/EIS. Refer to MM VG-1 and MM VG-2 in Appendix H of the Draft RMPA/EIS for the list of measures, plans, and other requirements for invasive weed control.

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			Conservation Association			
B7-89	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	BLM should analyze a Weed-Reduction Alternative that avoids the highest densities of Sahara mustard and moves the project footprint away from rare plant and invasive weed populations in order to lessen disturbance of soils.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of weeds. Extensive measures are included in MM VG-1 to remove and treat Sahara mustard and other invasive weeds on the Project site. The mowing alternatives also reduces these impacts. An additional alternative is not necessary since measures are proposed to reduce the effects. Impacts to rare plants are disclosed in the Draft RMPA/EIS in Section 3.6: Vegetation and Jurisdictional Waters. Measures to protect rare plant species are provided in Appendix H, under MM VG-2.
B7-90	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	What chemicals control would be used? The DEIS fails to talk about what herbicides would be used and how they would impact rare plants or other species like the tortoise.	Chemical controls were addressed extensively in the Draft RMPA/EIS, and as described in Master Response 2: Mojave Desert Tortoise (under Herbicides and Dust Palliatives). The impacts of herbicide use were addressed throughout the Draft RMPA/EIS (e.g. page 3-48, page 3-49, page 3-50, page 3-55, and page 3-84). The Applicant would implement a Site Restoration Plan and an Integrated Weed Management Plan that specifies procedures for managing vegetation and reducing the spread of non-native and noxious weeds, including use of herbicides. The plans would be submitted to BLM for review and approval prior to receiving an NTP." Attachment F and Attachment G to the POD, incorporated into the Draft RMPA/EIS by reference, include the list of the BLM-approved herbicides and adjuvant formulations that can be used, and the herbicide standard operating procedures and measures. Standard Operating Procedures would be incorporated into the Integrated Weed Management Plan and implemented.
B7-91	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Cumulative	The Gemini Solar Project is proposed on land in Clark County, Nevada, managed by the Bureau of Land Management (BLM). It would be a 690-megawatt utility-scale photovoltaic project on Mojave Desert scrub that is excellent and little disturbed habitat. The solar field, associated access roads, gen-tie lines, and a single pole site would permanently disturb 7,123 acres of high-quality desert. The area would be subject during construction to heavy equipment trampling and disturbing soils and desert surfaces here, with bulldozers, scraper-graders, trucks, and other heavy machinery. Unknown dust palliatives may be used for dust control. Water wells may be drilled, or water trucked in from outside. During operation of the power plant, regular truck traffic would drive over this area for panel washing, maintenance activities, potential mowing of vegetation and possible herbicide applications. Typical Power Purchase Agreements (PPAs) last 30 years, with decommissioning plans, but PPAs are subject to renewal or being sold and renegotiated. Decommissioning activities and mitigation measures such as seed collection or rare plants for future replanting are not well tested. Since the beginning of the push for large-scale solar development on public lands in California, Nevada, and Arizona, no utility-scale project has yet to be decommissioned and the restoration and recovery of Mojave Desert plant communities tracked and monitored. This is an unknown factor in solar development on native plant communities of the Southwest Deserts of the U.S.	The description of the Project provided by the commenter is generally correct. The unknown factors in decommissioning are acknowledged; however, the action as proposed is a 30-year lease and in accordance with NEPA has been evaluated as such. At the maturation of the lease, a new application, POD, and NEPA analysis would be required to continue the operation of the Project. At that time the environmental effects would need to be weighed into the decision to approve or deny an extension of the lease. Decommissioning has been assessed as proposed under the existing application.
B7-92	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western	Cumulative	Question 6, increasing Nevada's Renewable Portfolio Standard (RPS) to 50% in 2010 could lead to a large build-out of utility-scale solar projects in Clark and Lincoln Counties on public lands desert ecosystems, such as in California Wash. This would lead to cumulative impacts above and beyond the proposed Gemini Solar Project.	Cumulative impacts were addressed throughout the Draft RMPA/EIS. Refer to Section 3.0.4 on page 3-1 of the Draft RMPA/EIS for the requirements for cumulative impacts analyses. Known projects (those with an application, for example) must be addressed; however, speculative projects are not considered under NEPA. Any future proposal, particularly

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			Watersheds Project, and Morongo Basin Conservation Association			on BLM-managed lands, will need to undergo its own NEPA process and assess cumulative impacts.
B7-93	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Cumulative	The proposed West-wide Energy Corridor designation is undergoing review and planning. Section 39-116 is a Designated Section 368 Energy Corridor13 that passes through the area west of Valley of Fire State Park, along I-15, and potentially on top of milkvetch populations. Future construction of large high-voltage transmission towers in this corridor would disturb soils and possibly allow more spread of invasive plants. New roads would be created for maintenance activities, potentially increasing OHV and recreational use and soil disturbance.	Refer to Response to Comment B7-92 for the requirements for considering projects under cumulative analyses. No projects are proposed in COC 39-113 (it appears the commenter meant 39-113, which is the corridor west of Valley of Fire State Park and in the vicinity of the Project). The corridor passes through some modeled threecorner milkvetch habitat in the Project area, but areas beyond near Valley of Fire State Park have not been surveyed. The cumulative analysis in the RMPA/EIS accounted for possible buildout of ROW corridors, energy corridors, and disposal areas, in addition to the proposed cumulative projects. Any future proposals in this corridor would be subject to environmental review under NEPA, including cumulative analysis. The cumulative impacts of the Project with TransWest Express was addressed in the Black Mountain Corridor (see page 3-5 of the Draft RMPA/EIS).
B7-94	9/7/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	The evaluation of future project-related environmental impacts will await site-specific proposals and the required site-specific environmental review. A quantifiable and accurate evaluation of impacts at the local project level can be made only in response to an actual proposed energy project, when a proposal for an action with specific environmental consequences exists. Future proposed transmission lines within the 39-116 section may have significant impacts on threecorner milkvetch.	Refer to Response to Comment B7-93 for the requirements for considering projects under cumulative analyses and information on COC 39-113 in relation to threecorner milkvetch.
B7-95	9/8/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Because of its habitat preferences, this taxon occurs in areas that may be invaded by sand-loving weed species such as Saharan mustard (<i>Brassica tournefortii</i>), Mediterranean grass (<i>Schismus spp.</i>), salt cedar (<i>Tamarix ramosissima</i>), and Russian thistle (<i>Salsola tragus</i>). Saharan mustard is listed by the NDA on the Nevada Noxious Weed List as a Category B Weed, which are noxious weeds that are generally established in scattered populations in some counties of the State (NDA 2018a). Saharan mustard, African mustard (<i>Strigosella African</i>), Mediterranean grass, Russian thistle, and Halogeton (<i>Halogeton glomeratus</i>) were found in California Wash during spring 2018 botanical surveys by Phoenix Biological Consulting. Red brome (<i>Bromus madritensis ssp. rubens</i>), cheatgrass (<i>Bromus tectorum</i>), Mediterranean grass (<i>Schismus sp.</i>), and red stem stork’s bill (<i>Erodium cicutarium</i>) were found to be widespread in California Wash during botanical surveys in spring 2018 (Phoenix Biological Consulting 2018). Several other invasive weed species were recorded in California Wash by Phoenix Biological Consulting in spring 2018 during the botanical surveys including: Russian knapweed (<i>Acroptilon repens</i>), oat grass (<i>Avena sp.</i>), Chilean chess (<i>Bromus berterioanus</i>), ripgut brome (<i>Bromus diandrus</i>), Malta starthistle (<i>Centaurea melitensis</i>), Bermuda grass (<i>Cynodon dactylon</i>), foxtail barley (<i>Hordeum murinum ssp. glaucum</i>), Timothy grass (<i>Phleum pratense</i>), prickly sow thistle (<i>Sonchus asper</i>), and salt cedar (<i>Tamarix ramosissima</i>). Of these, Malta starthistle is a Category A Weed, defined as noxious weeds that are “generally not found or that are limited in distribution throughout the State;” Russian knapweed is a Category B	The potential for spread of invasive weeds associated with the Project and impacts on rare plants are analyzed in Section 3.6: Vegetation and Jurisdictional Waters of the Draft RMPA/EIS. Measures to protect rare plant species and conduct invasive weed control were provided in Appendix H of the Draft RMPA/EIS, under MM VG-2 and MM VG-1. The mowing alternatives also reduces these impacts from invasive species spread and on rare plants.

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					Weed (defined above); and, salt cedar is a Category C Weeds, defined as noxious weeds that are generally established and generally widespread in many counties of the State (NDA 2018a).	
B7-96	9/9/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Trespass cattle from the Bundy Ranch have been reported across this area. Bunkerville is in the midst of the range of the taxon, and an unknown number and distribution of trespass cattle trample the habitat of this forb. Cattle grazing and trampling can significantly impact native annual forbs.	The comment is noted. No cattle have been reported or observed on the Project site.
B7-97	9/10/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Illegal off-road use can disturb soils and crush vegetation in the deserts.	The Draft RMPA/EIS acknowledged this, as it stated on page 3-48, "[t]he threecorner milkvetch population group that would be impacted by the Proposed Action is one of the largest areas of occupied habitat and is the largest area unimpacted by disposal boundaries, ROWs, and recreation. All populations on BLM land are threatened by OHV, noxious and non-native weeds, and development. Many of the populations on NPS land also have noxious and non-native weed problems." Control of illegal OHV is outside the scope of the Project and RMPA/EIS. It is addressed in terms of how OHV has affected baseline conditions.
B7-98	9/11/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Cumulative	Clark County adopted a resolution that would ask Federal lawmakers to turn over 38,000 acres of federal lands managed by the Bureau of Land Management to private ownership. Some of this proposed land transfer occurs on the southwest margin of the habitat for threecorner milkvetch. The land transfer would also bring development and urban sprawl to the border of the habitat for the species. New subdivisions and land clearing would spread of invasive weeds. Placing a new, large population of new residents on the margin of the habitat will encourage more use of adjacent public lands. This could result in increased use of adjacent public lands. That could encourage trampling of habitat, increased off-highway vehicle use and the spread of invasive weeds onto the habitat. The resolution ¹⁵ is supported by the county and is now being considered by the Nevada Legislature and Federal Lawmakers. The recently proposed Clark County Lands Transfer Bill would potentially increase urban sprawl to the border of Lake Mead National Recreation Area at Boulder Basin. Records of threecorner milkvetch have been found in Boulder Basin at Sandy Cove within the National Recreation Area.	The comment is noted. The lands bill is considered in the cumulative impacts analysis for threecorner milkvetch, as was presented on page 3-53 of the Draft RMPA/EIS for the Proposed Action, page 3-59 for the All Mowing Alternative, and page 3-66 for the Hybrid Alternative. Cumulative losses of habitat are considered adverse.
B7-99	9/12/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Urban growth in Las Vegas and cities in Arizona could lead to increased visitor use of park units like Valley of Fire State Park and Lake Mead National Recreation Area. Illegal incursions of vehicles, trampling, tracking in invasive weeds, hiking and camping could increase in parks, with impacts to native forbs.	The comment is noted. These impacts are unrelated to the Project and would not result from implementation of the Project; therefore, they are beyond the scope of the Final RMPA/EIS. The spread of invasive weeds is addressed in cumulative impacts. On page 3-54 it states that, "The direct and indirect cumulative effect on native vegetation communities and special status plants would be substantial and adverse from the spread of weeds." The All Mowing Alternative also addresses cumulative impacts from weeds as follows on page 3-58 of the Draft RMPA/EIS, "Implementation of the Site Restoration Plan and MM AQ-1 and native vegetation maintenance on the Project site under the All Mowing Alternative would reduce the Project's cumulative contribution to overall weed spread in the region compared with the Proposed Action." The cumulative analysis for the spread of weeds is presented on page 3-66 of

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						the Draft RMPA/EIS and states, "The introduction and spread of weeds with the Hybrid Alternative would be similar to the effects described for the Proposed Action (although somewhat reduced due to mowing of 65 percent of the site). MM VG-2 and MM AQ-1 under this alternative would reduce the Project's cumulative contribution to overall weed spread in the region compared to the Proposed Action, but cumulative impacts would still occur."
B7-100	9/13/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Periods of drought can be an added stressor to populations that are already under disturbance regimes such as urban development, solar energy construction, livestock grazing, and illegal off-road activity which disturb or remove soil surfaces. Fluctuations of the shoreline of Lake mead, from drought and urban water use, can submerge populations. Climate change may exacerbate drought cycles and cause more extreme aridity in the Mojave Desert.	Impacts to vegetation were addressed in Section 3.6: Vegetation and Jurisdictional Waters. Impacts from drought across the region are part of the baseline conditions. Impacts from loss of habitat were addressed in the Draft RMPA/EIS. The solar facility would not cause droughts and, irrespective of drought conditions, the loss of habitat for certain species was identified as adverse in the Draft RMPA/EIS.
B7-101	9/14/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Because of these cumulative threats to the milkvetch, only avoidance and the No Action Alternative will help keep this species from slipping closer to extinction.	The impacts of the Proposed Action and two alternatives were presented in detail in Section 3.6: Vegetation and Jurisdictional Waters, starting on page 3-48 of the Draft RMPA/EIS. The Draft RMPA/EIS acknowledged indirect impacts from invasive species spread, MM VG-1 and MM VG-2 provide numerous measures to reduce effects. The No Action Alternative results in no changes over baseline conditions, existing threats would remain.
B7-102	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	The DEIS has a seed-collecting mitigation measure, MM-VG-2: "The Applicant shall bond for the cost of seed collection and seed storage by an approved botanic garden. The bond shall be returned when these stipulations have been successfully completed." No successful seed collecting and replanting attempt has been tested on these rare milkvetches, and no assurance is given that this will successfully limit population declines. Seed collection has failed to achieve germination results in many rare Mojave Desert plant species, and should not be used as a mitigation. Only avoidance of the plant populations can limit declines.	The Project footprint has been refined to limit impacts to sensitive species such as the threecorner milkvetch. Although seed collection has not been tested on this species, it can be tested here, understanding that it may not be effective. Impacts to threecorner milkvetch were fully disclosed in the Draft RMPA/EIS and identified as adverse, even for the mowing alternatives and with the mitigation since the effectiveness of seed collection is unknown. Refer to the "Residual Impacts" discussions in Section 3.6: Vegetation and Jurisdictional Waters of the Draft RMPA/EIS.
B7-103	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo	Wildlife, Migratory Birds, and Special Status Species	A Burrowing Owl Mitigation Plan should not be deferred, but be prepared now before project approval.	The methods for addressing and reducing impacts to burrowing owl is presented in the BBBS, which is available with the Final RMPA/EIS.

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			Basin Conservation Association			
B7-104	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	A system should be in place to pay for a kit fox monitoring plan to make sure another outbreak of canine distemper will not happen, as occurred at Genesis Solar Energy Project in the California Desert.	The comment is acknowledged. The distemper found in those desert kit fox could not be definitively linked to the solar project. It was not known how the foxes contracted the disease. Canine distemper can cycle naturally in wild carnivore populations, but can also be transmitted to and from domestic animals that come in contact with wildlife. Kit fox is protected in California (where the Genesis Project is located) but is considered a common species in Nevada. Desert kit fox monitoring would not be needed since it is not a protected and is a common species in the Project area. Appendix H includes several mitigation measures that includes worker awareness training and biological monitors. MM WILD-5 in Appendix H has been updated in the Final RMPA/EIS to add that pets are not allowed on the Project site.
B7-105	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	There is evidence of bighorn sheep using the California Wash area, and sign has been found. This indicates that the proposed solar project is indeed Desert bighorn sheep habitat, whether seasonal foraging habitat or connectivity habitat between the Muddy Mountains and the Sheep range. Developing the site will potentially remove connectivity habitat for the species, and BLM needs to analyze this. The DEIS has almost no information on the desert bighorn sheep in the region. The biology surveys found bighorn sheep sign, a partial horn, on Site A or the Northeast corner of the project site. That is one of the few references to bighorn sheep and it is incomplete.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds . Bighorn sheep are not found or regular visitors to the valley.
B7-106	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	Basin and Range Watch submitted scoping comments on bighorn sheep and they can be referenced here: https://eplanning.blm.gov/epl-frontoffice/projects/nepa/100498/160129/195775/Gemini_Final_Scoping_Report_&_Appendices_508.pdf In particular, BLM did not respond to the following comment: “Desert bighorn sheep have been well documented within the Muddy Mountains. Including the wilderness area and surrounding non-wilderness lands, the population is estimated to be approximately 265, with a potential population estimate of 505 based on forage supply (Rangewide Plan for Managing Habitat of Desert Bighorn Sheep on Public Lands). Two wildlife guzzlers were constructed within the wilderness to convert the area from cool season to year-long habitat. Desert bighorns are a state protected species and considered a watch species under the Clark County MSHCP. Desert bighorn sheep are associated with rugged terrain including canyons, steep slopes, cliffs, and mountain tops. In the Muddy Mountains, desert bighorns could be described as nomadic; remaining mobile throughout their range to take advantage of variable rainfall patterns and available water sources (many of which are ephemeral). NDOW biologists have observed that desert bighorns usually limit summer activity to an area within two miles of water, although some summer movements can be greater.”	The solar facility would not be located in the Muddy Mountains. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project.
B7-107	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo	Wildlife, Migratory Birds, and Special Status Species	Fencing off the project even for a mowing alternative will cut off linkage and remove foraging habitat for sheep on the bajada of the Muddy Mountains and Gemini Solar would be 11 square miles. BLM must do a better job reviewing this subject in a Supplemental EIS.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project.

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			Basin Conservation Association			
B7-108	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Recreation	The Muddy Mountains are a popular bighorn sheep hunting area. A supplemental EIS should review the potential impacts to access and recreational hunting for desert bighorn sheep caused by Gemini Solar.	Access to the Muddy Mountains would not be impeded by the Project, as was addressed on pages 3-16 and 3-17 of the Draft RMPA/EIS. Access is primarily along Valley of Fire Road and BSBCB. Temporary traffic impacts could occur as a result of Project construction, as noted on page 3-16; however, access would not be severed. Once the Project is operational, traffic impacts would be minimal. No impacts to recreation or recreational hunting in the Muddy Mountains would occur as the area does not overlap with the Project and the Project would not sever access. The Project would not impact bighorn sheep, as further described in Master Response 3: Bighorn Sheep and Migratory Birds .
B7-109	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	Conservation groups specifically asked BLM how the project would impact bats in the scoping comments and there is no response. The BLM should calculate the loss of habitat for insects that bats feed on. There should be a volume of lost food items for the species. The DEIS should list each of the 15 species found and the potential impacts to each one.	<p>Bats were addressed in the Draft RMPA/EIS, starting on page 3-69. The section stated that, "The study area could be used by all of these special status bats and other common bats for foraging. Little to no suitable roosting habitat for bats is found in the study area. No mines, rocky outcrops, trees, or buildings are located in the study area. Some medium-sized caliche caves are present along the upper reaches of California Wash (in the southern portions of the Project site), but the lack of a perennial water source would likely preclude their use for roosting."</p> <p>Impacts to bats were addressed on page 3-70 of the Draft RMPA/EIS, which addressed foraging habitat and stated, "Potentially suitable foraging habitat for bat species is present in the Project area, but the habitat is not expected to be of high-quality due to the lack of permanent water." The analysis of loss of habitat to wildlife in general also encompasses the analysis of insects that bats may forage on. Page 3-70 of the Draft RMPA/EIS states, "The Proposed Action would permanently affect a total of 7,097 acres (2,872 hectares) of suitable habitat for species, which is approximately 20 percent of the approximately 37,000 acres (14,973 hectares) of available creosote bush desert scrub habitat in the ROW application area. Additional creosote bush desert scrub habitat is available on BLM land surrounding the Project site, and tens of thousands of additional acres are available to the north of the Project site on the Moapa River Indian Reservation. Approximately 20 million additional acres (8 million hectares) are available within the larger Mojave ecoregion (BLM 2014a), which contains similar habitat. The effect of the Project on this habitat type would be locally significant due to the size of the site but regionally minor."</p> <p>The Avian and Bat Mortality Mitigation Plan was prepared as well to address impacts to bats from the solar facility, and is included with the Final RMPA/EIS.</p>
B7-110	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds	Threatened, Endangered, and Candidate Species	You can see from the results of USFWS surveys in the table that (a) 10 of 17 populations of the Mojave desert tortoise declined from 2004 to 2014; (b) 11 of 17 populations of the Mojave desert tortoise are no longer viable; and (c) these 11 populations represent 89.7 percent of the range-wide habitat in CHUs/TCAs, which encompass the best remaining tortoise habitats and populations. Removing over 200 adult tortoises and potentially as many as 900 juvenile tortoises will negatively impact the tortoise both locally and cumulatively for the species. Mortality from translocation has been	The impacts mentioned by the commenter were adequately addressed in the Draft RMPA/EIS as was stated on page 3-82, the Proposed Action, "[d]irect effects include the take of up to the estimated 215 adult tortoises (and the estimated 900 or more juveniles) expected to be found on the Project site during construction; death or injury to tortoises within the construction areas of the gen-tie line routes; and permanent loss of desert tortoise

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			Project, and Morongo Basin Conservation Association		high in past large-scale projects, and habitat removal will also reduce population viability in the area. In addition, the project will block genetic connectivity between Recovery Units as was detailed in our scoping letter. We continue to advocate for the No Action Alternative in order to conserve the Mojave desert tortoise and prevent it from becoming an endangered species on the way to extinction in the wild.	<p>habitat. The Proposed Action would result in the direct or indirect loss of up to all tortoises found on the Project site, since there are no places within the Northeastern Mojave Recovery Unit where the tortoises can be moved. Construction would result in the removal of all vegetation and habitat over approximately 7,097 acres (2,872 hectares) that otherwise supports desert tortoise and would include fencing that would exclude tortoise movement. The loss of all adult and juvenile tortoises on the Project site, in addition to the loss of habitat, would also result in a substantial adverse impact on the species and the local population. MM WILD-1 requires that the footprint of the solar facility be reduced to the minimum size needed; however, substantial loss of habitat and a substantial take of tortoises would still occur." Connectivity impacts to genetics are also described as adverse for the Proposed Action. Note that some revisions have been made to the text on page 3-82 of the Final RMPA/EIS to clarify that it is mortality take or "loss" under the Proposed Action.</p> <p>The All Mowing Alternative and the Hybrid Alternative would address the loss of desert tortoise although impacts on this species may still remain. The findings of several studies have reinforced that use of translocation of desert tortoise does not have deleterious effects as explained in Master Response 2: Mojave Desert Tortoise (under Tortoise Translocation).</p> <p>Approximately 34 and 36 tortoises would be translocated (for the All Mowing and Hybrid Alternatives, respectively) to a site within the lease area to the south, but no off-site translocation is anticipated. Most tortoises would stay in the Project area and could reoccupy the Project site, which reduces impacts. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the monitoring program for translocated and reintroduced tortoises.</p> <p>The commenter's preference for the No Action Alternative is noted.</p>
B7-111	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	The All Mowing and Hybrid Alternative present what is being called a potential mitigation for this impact. The BLM can no longer use off-site compensatory mitigation due to a recent order by the Trump Administration. It appears that vegetation mowing in the BLM's Preferred Hybrid Alternative is intended to make up for this.	<p>Except where the law specifically requires or as described in Instruction Memorandum No. 2019-018, the BLM must not require compensatory mitigation from public land users. While the BLM will consider voluntary proposals for compensatory mitigation, and state-mandated compensatory mitigation, the BLM will not accept any monetary payment to mitigate the impacts of a proposed action. In all instances, the BLM must refrain from authorizing any activity that causes unnecessary or undue degradation (UUD), pursuant to FLPMA Section 302(b). Compensatory mitigation may still be applied by the USFWS for ESA permitting. The All Mowing and Hybrid Alternatives address the fact that no off-site locations are available for distantly translocating tortoises and allows for tortoises to reoccupy the development areas after construction instead of losing the area for occupation entirely. Refer to the Biological Assessment, included as an appendix to the Final RMPA/EIS, for a discussion of the required desert tortoise conservation fees (page 55), which states "In order to further offset adverse effects from the proposed Project to the threatened desert tortoise, the Applicant will pay a desert tortoise remuneration fee of \$902 per acre (\$2,255 per hectare) to the BLM. BLM will reduce the fee by 50 percent for the 4,460 acres (1,805 hectares) where the vegetation is being mowed, for a total of \$2,011,460 (4,460 acres X 451 acres [1,805 hectares X 183 hectares]). The reduction in the fees is based on the Applicant preserving the soils, reducing potential invasive weeds, mowing vegetation to 24</p>

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						<p>inches (61 centimeters) and raising the tortoise fence 8 inches (20 centimeters) from the bottom thus allowing the potential that some tortoises might reoccupy the solar facility after construction is complete. These fees will be used to support desert tortoise recovery action that may include the following:</p> <ol style="list-style-type: none"> 1. Habitat restoration; 2. Monitor habitat, tortoise populations, and effectiveness of recovery actions; 3. Applied research to promote recovery/conservation; 4. Public outreach; 5. Predator management; 6. Other actions recommended by the Desert Tortoise Recovery Office."
B7-112	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	<p>The surveys conducted by Phoenix Biological Consulting estimate that 215 adult tortoises would be displaced by Gemini Solar and over 900 juveniles would be impacted. That is the largest number of tortoises that would be impacted by a large-scale solar project to date.</p> <p>During protocol surveys, 18.7 tortoises/square mile (7.2/square km) were found on the Gemini Solar Project site by Phoenix Biological Consulting in 2017 (Phoenix Biological Consulting,2018. Desert Tortoise Survey Report (Areas A-E), Gemini Solar Project N-84631. Prepared for Arevia Power & Solar Partners XI, LLC (a wholly owned subsidiary of Valley of Fire, LLC). Prepared by Phoenix Biological Consulting. January 30, 2018)</p> <p>This is an extremely high density of tortoises, and should warrant an immediate halt to the project, as this is a very high-value desert tortoise area.</p>	<p>The comment is noted and consistent with the baseline data presented in the Draft RMPA/EIS and the Biological Assessment, included as an appendix to the Final RMPA/EIS, and as described under Master Response 2: Mojave Desert Tortoise (under Desert Tortoise Habitat and Densities). The impacts are being disclosed through the NEPA process and will factor into the decision to approve or deny the ROW application, determined at the ROD.</p>
B7-113	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	<p>That Phoenix Biological Consulting found 7.2 tortoises/square km should necessitate a halt to the project and consideration of conserving this tortoise habitat as an Area of Critical Environmental Concern due to its very high tortoise density.</p>	<p>Refer to Master Response 1: Alternatives for further information on why an ACEC alternative is outside the scope of the RMPA/EIS.</p>
B7-114	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	<p>The proposed action would clear 7,100 acres of habitat through traditional disc and roll clearing. Tortoises would be excavated from burrows and either relocated or translocated away from the project. A recent study by the Smithsonian has determined that translocated male desert tortoises are not reproducing. Had the BLM directed this development on lower density areas in the project application, the impacts to desert tortoise would be less. The surveys conducted by Phoenix Biological Consulting determined that area F had fewer desert tortoises. Yet BLM will not review any reduced footprint alternatives.</p>	<p>Although the Mulder et al. (2017) study provided initially valuable data that suggested that reproductive assimilation by translocated males might be compromised in the initial period following translocation, the study was limited in scope. Specifically, its review was limited to at a single year's reproductive output and did not evaluate assimilation in subsequent years. Further, the study only looked at translocated females, rather than resident and translocated females. Finally, hatchlings from a maximum of only 34 of 69 gravid translocated females were examined (female desert tortoises produce roughly two clutches in years of adequate forage, so the 34 evaluated clutches could be from as few as 17 females). The study noted that translocated males were observed copulating at relatively the same rate as resident males. As such, questions remain and additional studies are warranted to more fully understand assimilation timelines and processes.</p>

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						<p>A critical distinction exists between the Mulder et al. study and what would occur at the Project site. The Mulder et al. study examined translocations that were moved far from their initial home ranges into unfamiliar territory with unfamiliar resident tortoises (Mulder, et al. 2017). Most of the Gemini tortoises for the Preferred Alternative will not be translocated, but rather will be moved within their home ranges. While some social and home-range shifting will undoubtedly occur, it is anticipated to be minimized by familiarity with the landscape and local tortoises.</p> <p>Refer to Master Response 1: Alternatives, for a discussion of the alternatives considered and the alternative screening process. The alternatives were developed to balance impacts to various resources, one of which was desert tortoise, which is why some areas where desert tortoise densities were very low were not considered. These areas (development area F, for example) contains large populations of a state-endangered plant, threecorner milkvetch.</p>
B7-115	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	The proposed action will create countless raven perches on panels. Fences, transmission lines and new buildings.	Impacts from ravens were addressed on page 3-84 of the Draft RMPA/EIS. The Applicant would be required to implement the BLM Raven Management Plan to reduce impacts and presence of ravens at the Project.
B7-116	9/7/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	<p>As we pointed out in our scoping comments, the cumulative scenario of tortoise impacts in the region is very big. Close to 17,000 acres of other</p> <p>large-scale solar has either been built or proposed to be built and Clark County wants an additional 40,000 acres of public land turned over to developers, most of that being desert tortoise habitat.</p>	Cumulative impacts to desert tortoise were addressed in the Draft RMPA/EIS on page 3-85 for the Proposed Action, page 3-88 for the All Mowing Alternative, and page 3-90 for the Hybrid Alternative. Impacts from known proposed solar developments were quantified. While impacts from the County's Land Disposal Act are not quantified since individual projects and habitat are not yet proposed, the Land Disposal Act is considered in the analysis and cumulative impacts are described, appropriately, as adverse.
B7-117	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	BLM should consider that grazing harmed tortoises in this area, and took action to protect tortoises. Now BLM is considering a large-scale solar project that would equally impact tortoises and disturb vital habitat in this connectivity corridor—a No Action Alternative is warranted.	NEPA requires an analysis of the Proposed Action, assessing impacts against the baseline environment. Mitigating impacts from previous grazing is outside the scope of the NEPA analysis. There was a Muddy Mountain grazing allotment that was historically grazed that encompassed the Project area. The allotment no longer allows grazing, nor has the BLM designated the Project site specifically for tortoise conservation. The commenter's preference for the No Action Alternative is noted.

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B7-118	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	A supplemental EIS should consider an alternate location for the gen-tie lines. Construction of new roads, lay down areas, lattice towers and monopoles could cause direct impact and new gen-tie lines would provide perches for ravens.	Refer to Response to Comment B7-115. Impacts from ravens was adequately addressed in the Draft RMPA/EIS. Alternate gen-tie line locations would not reduce effects. The lines must connect the solar facility to the Crystal Substation and thus, be in proximity to the solar facility.
B7-119	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	<p>The heavy-duty mulchers that would be used weigh over 20,000 pounds. As every desert tortoise biologist is aware, finding the juvenile and hatchling tortoises is quite difficult. Many are missed and with an estimate 900 juveniles that would be impacted by the project, there could be significant mortality. It should also be noted that these machines will crush, kill and shred every other living creature in their path. Vehicles would be allowed to enter the site for the next 30 years to conduct various maintenance activities including vegetation trimming and panel washing. With the difficulty of finding juveniles, this creates a big potential hazard for the tortoise. The BLM wants to allow a Threatened species to re-enter an industrialized energy zone. This is a first and is quite irresponsible.</p> <p>The mowing alternatives would allow desert tortoises to live on the site among solar panels, but will also create a limitless amount of perches for ravens. Solar panels, fences, buildings, battery storage – anything new is an opportunity for subsidized predators.</p> <p>The Hybrid Alternative and the All Mowing Alternative would use heavy duty mulchers to both run over every square foot of the project site and masticate any living thing in its path. The BLM has selected the hybrid alternative as the preferred alternative. The BLM is attempting to convince the public that this is the more green alternative and there are advantages to this, but the plan has not been very well thought out. Gemini Solar is owned by Arevia and the owners of Gemini have ties to the Pahrump Solar Project built by Bombard Associates.</p>	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) that clarifies that neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts.</p> <p>On-going operations and maintenance is described further in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance). Motorized mowing equipment would not be used once tortoise are introduced back into the solar facility. Trimming would only occur with hand tools that can be mechanical or motorized. Clarifications have been made throughout the Final RMPA/EIS. Panel cleaning would occur by manual methods using brushes and air or using robotic systems, or if water is used no excess water would drip off the panels and the cleaning system would be integrated into or attached to the panels. A biological monitor would also be present during panel cleaning and vegetation trimming. Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) also clarifies that Biological Assessment also requires that biological monitors be present during ground-disturbing and/or off-road vehicle or equipment operations and maintenance activities outside of the fenced solar facility or within mowed areas to ensure that no tortoises are in harm's way.</p> <p>Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described under Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities. The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS. The crushed vegetation is expected to recover over a number of years, based on evidence from other Mojave Desert solar facilities where vegetation was crushed and allowed to regrow (page 3-73 of the Draft RMPA/EIS).</p>
B7-120	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin	Threatened, Endangered, and Candidate Species	<p>The Pahrump Solar Project is an 80-acre photovoltaic facility and used vegetation grubbing and has a Habitat Conservation Plan. Gemini is being modeled after this project. One should recognize that Gemini would be roughly 100 times larger than the Pahrump Solar Project.</p> <p>Four desert tortoises were found on the project site. Small doors were installed in the parameter fence so tortoises can re-enter. While all 4 tortoises did return to the site, just about all of the new annual vegetation that returned is not native. Red brome, split grass, erodium and Russian thistle are all abundant on the site. These are also less nutritious for desert tortoises. While the Gemini Solar developers claim that the Pahrump Solar Project is successful, it really has only been complete for under 3 years. The desert tortoise is a long-lived species and 3 years do not determine success in this case.</p>	<p>The comment is noted. Mowing and reintroduction has been employed on a much smaller scale for the project mentioned by the commenter. Comparing the Project to another site would not be possible. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the proposed use of vegetation mowing, the understanding that it is a new method, the monitoring that would be required, in addition to a discussion of effects on desert tortoise from invasive weeds.</p>

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B7-121	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	<p>At the public meeting, one of the developers was telling the public that tortoises would benefit from the shade from solar panels. Shade will be an impact and tortoises never needed our help in this department. Tortoises are great burrowers and they already have the shade issue figured out. Impacts from too much shade will be:</p> <ol style="list-style-type: none"> 1. Desert tortoises need sun when coming out of hibernation and when basking in the fall. Warming up is part of thermoregulation. Solar panels will block much of the sun and degrade the habitat. 2. Many of the plants that are food for the tortoise will be blocked from sunlight in the spring and fall. 3. Providing large shady areas will also create opportunities for predators that seek out tortoises. 	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels) for information on how shade may affect desert tortoises. While the full effects on the native vegetation due to the absence of direct sunlight and moisture unavailability is unknown, revegetation of plants has been proven to be feasible based on studies (Beatty, et al. 2017). Additionally, sunlight would reach the vegetation growing between the panels as there would be approximately 20 feet (6 meters) between panel rows.</p> <p>The solar panels provide shade to the ground surface, although how the shade will impact tortoise behavior is not known. Solar panels could also conceal desert tortoise from view.</p>
B7-122	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	<p>Mowing vegetation with 20,000-pound vehicles will completely crush all soil crust and destroy many delicate roots under the ground. This will slow down and inhibit plant growth including food plants for the desert tortoise.</p> <p>Allowing plants to only grow up to 24 inches will also inhibit extensive root growth of plants and cause erosion which will bring in more invasive species. This would also inhibit natural shade. Since the panels would be 15 feet off the ground for mowing alternatives, it seems ridiculous to only allow the vegetation to grow 24 inches.</p>	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized.</p> <p>Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities. The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS. Use of these methodologies are the best development method options to allow multiple uses of public lands without permanently damaging soil seed banks, perennial vegetation, or exacerbating weeds.</p> <p>The top edge of the panel would be off the ground 15 feet (4.6 meters) in the most vertical position. Vegetation must be lower than the lowest edge, which would be 2 feet (0.6 meter) to 2.5 feet (0.9 meter) above the ground surface in the mowed areas.</p>
B7-123	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	<p>The heavy-duty mulchers are very noisy. And are essentially bigger versions of off highway vehicles driving over desert ecosystems.</p> <p>The USGS published a report called Effects of off-road vehicles on vertebrates in the California desert (Bury et al. 1977).</p> <p>From the report: "Off-road vehicle (ORV) use provides a form of outdoor recreation that is increasingly popular. The purpose of this study was to examine the impact of these machines on creosote shrub habitat and associated wildlife in the western California Desert. Comparisons at eight paired sites (Control and ORV use) demonstrate that ORV-use areas have significantly fewer species of vertebrates, greatly reduced abundance of individuals, and noticeably lower reptile and small mammal biomass. Diversity, density, and biomass of reptiles and small mammals are inversely related to the level of ORV usage. The number</p>	<p>Refer to Response to Comment B7-44 for a discussion of how noise impacts were addressed in the Draft RMPA/EIS. Noise during operations would be considerably less. It is expected that wildlife would leave the active construction areas. Population effects from noise during operation of the Project would not occur since noise would be minimal. Use of OHVs or increased OHV use is not part of the Project proposal.</p>

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					of individuals found in heavily used and pit areas was 55% and 20%, respectively, of that present in undisturbed sites. Biomass estimates were even lower (23% and 17%, respectively). Censuses at three localities also showed decreased diversity, density, and biomass estimates of breeding birds in DRV-used areas. Present evidence indicates that off-road vehicles have a negative effect on desert wildlife over large areas. This widespread impact must be recognized to manage and conserve resources in DRV-use areas.”	
B7-124	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Vegetation grows quite slow in the Mojave Desert so one year will not produce much growth.	The comment is noted and does not conflict with any statements presented in the Draft RMPA/EIS.
B7-125	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	The EIS says they would be kept at the Great Basin Institute in Las Vegas, but the BLM told us it would be at the old Desert Tortoise Conservation Center off Blue Diamond Road.	Refer to the Desert Tortoise Translocation Plan for information on translocation, including holding facilities, which has been included as an appendix to the Final RMPA/EIS. The holding facility will be the BLM Research Facility, formerly the Desert Tortoise Conservation Center (page 20 of the Desert Tortoise Translocation Plan, provided as an appendix to this Final RMPA/EIS). The Great Basin Institute has their Las Vegas Office at the BLM Research Facility.
B7-126	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	Captive tortoises have contracted the Upper Respiratory Tract Disease (URTD) in crowded conditions. Although this would be monitored, detection of both <i>Mycoplasma agassizii</i> and <i>Mycoplasma testudineum</i> can be difficult to detect.	Initial health assessments were performed during surveys in the fall of 2018 as described in Master Response 2: Mojave Desert Tortoise (under Tortoise Translocation). Disease does not appear to be an issue in the Project area and additional testing would be performed as fully described in the master response. Tortoise showing disease are not placed with healthy tortoises. In addition, tortoise densities from surveys were taken into consideration when deciding where tortoises would be translocated. The BLM and contractors will ensure tortoise densities will not be overly inflated in any particular area, which could lead to increased risk of disease and starvation.
B7-127	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin	Threatened, Endangered, and Candidate Species	Releasing so many tortoises back onto a developed site could possibly spread disease to resident populations. And allowing resident tortoises to enter the project as well as allowing translocated tortoises back out of the site has the potential to spread disease to wild populations.	Refer to Response to Comment B7-126 and Master Response 2: Mojave Desert Tortoise (under Tortoise Translocation) for a discussion of the measures taken to prevent the spread of disease in translocated tortoises, if any is found. In addition, long-term monitoring of tracked tortoises would occur, allowing monitors to intervene if there is a disease outbreak or decrease in the body condition of tortoises.

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			Conservation Association			
B7-128	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	Conservation groups submitted comments on this subject and these can be referred to in the Gemini Scoping Report. Basin and Range Watch also submitted attachments on the subject from the Multi-Agency Solar Avian Working Group. The BLM responded to almost none of these comments. We believe the BLM needs to examine this issue in greater detail. We would like to see more of this information reviewed in a Supplemental EIS.	The comments were addressed through the appropriate process, which is during the Section 7 consultation with the USFWS under the ESA. The issues of health assessment and translocation are typically included in the Desert Tortoise Translocation Plan, which is a component of the Biological Assessment. As demonstrated in the Response to Comment B7-126 and Master Response 2: Mojave Desert Tortoise (under Tortoise Translocation), the concerns are addressed and measures in place to prevent the spread of disease, including two health assessments prior to translocation, although the tortoises in the area do not seem to show signs of these illnesses.
B7-129	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	We would like BLM to respond to this comment we submitted for scoping: “There are updated numbers that confirm there are significant numbers of bird mortalities found at solar projects. Photovoltaic project companies are turning in many of these numbers. Since the projects are very large, these numbers only likely represent a smaller percentage of what is actually taking place. Updated information about avian-solar interactions by US Fish and Wildlife Service shows this is a concern. Solar projects can have significant impacts to sensitive species, and those listed under the federal Endangered Species Act. Data reported and gathered from seven solar projects in the southern California desert and arid grassland habitats from 2012 through April 2016 show that 183 bird species have been killed at solar projects, a number that rises with new information. 3,545 individual birds were reported dead at solar projects, from a mix of incidental finds and systematic surveys (Dietsch 2016). This is likely an under estimate.”	Bird collisions with construction equipment, transmission lines, facility lighting, and solar panels were addressed on page 3-71 of the Draft RMPA/EIS. The analysis on page 3-72 states, "Birds could also collide with solar panels resulting in injury or death. These types of collisions have been documented at other solar facilities in the desert. The BBCS would include a robust systematic monitoring and adaptive management plan for the Project to assist in avoiding and minimizing impacts on migratory birds, per MM WILD-7. The monitoring would include overall annual mortality, species composition, and spatial differentiation based on established searcher efficiency and carcass persistence trials at the site." The BBCS and ABMMP, that is part of the BBCS, is available with the Final RMPA/EIS. Additional information on how impacts to migratory birds were addressed in the Draft RMPA/EIS is provided in Master Response 3: Bighorn Sheep and Migratory Birds .
B7-130	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	The project will be built in a location that is within several potential local avian flyways. There is quite a bit of water in the region. Birds do use Lake Mead, Colorado River, the Muddy River, the Virgin River, the Pahrnatagat National Wildlife Refuge, the Las Vegas Wetlands Park, Coyote Springs Valley and the Desert National Wildlife Refuge.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how bird impacts with solar panels are minimized. Although not specified, it is assumed that this is the impact of concern by the commenter.
B7-131	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	Specifically, the threats to these species from solar panels was not discussed – • Federal Endangered/Threatened – Yuma Ridgeway’s (Clapper), Willow flycatcher, and Yellow billed cuckoo.	Suitable habitat for Yuma clapper rail, yellow-billed cuckoo, and southwestern willow flycatcher does not occur within or near the Project area and there is no evidence to indicate that dispersal would occur in the Project area, as the area lacks aquatic features. These species were not addressed in the Draft RMPA/EIS because they would not occur in or near the Project area. These species are mentioned in the Biological Assessment, included as an appendix to the Final RMPA/EIS. Refer to pages 88 to 89 of the Biological Assessment for more information.

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B7-132	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	Birds of Conservation Concern – Eared grebe, American white pelican, Burrowing owl, Calliope hummingbird, Bald Eagle, Ferruginous Hawk, Golden Eagle, Peregrine Falcon, Snowy Plover, Long-billed Curlew, Black Swift, Calliope Hummingbird, Lewis's Woodpecker, Willow Flycatcher, Loggerhead Shrike, Virginia's Warbler, and Sage Sparrow. There should be a complete list of potential birds that may collide with solar panels.	<p>All migratory birds were recognized as protected in the Draft RMPA/EIS, as stated on page 3-68, "Migratory birds are protected under the following regulations and laws: Migratory Bird Treaty Act of 1918, as amended; the Fish and Wildlife Conservation Act of 1980, as amended; the Bald and Eagle Protection Act; and Executive Order 13186. Additional information on laws and regulations pertaining to wildlife, migratory birds, and special status species are provided in Appendix E." While all of these specific species were not identified in the Draft RMPA/EIS, impacts to all were addressed on pages 3-68, 3-69, 3-71, 3-72, 3-74, 3-75, 3-77, and 3-78. MM WILD-7 and MM WILD-8 in Appendix H includes measures to reduce effects to these species and all migratory birds.</p> <p>Several of these bird species were listed in Exhibit 11: Incidental Vertebrates Observed on pages 36 to 37 of the Desert Tortoise Survey Area Report (Areas A-E), incorporated by reference into the Draft RMPA/EIS and in Table 4: Avian species observed during baseline surveys in the Study Area in the BBCS.</p>
B7-133	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	The DEIS does not say what photovoltaic technology would be used. Thin-film panels are very reflective and the projects that have used these. A more complete EIS would talk about this technology. It would be easier to determine what the impacts would be if we knew what photovoltaic technology was uses.	The type of surface used would not change the impact analysis, even to avian species. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for how impacts of birds with solar panels (and other components) are addressed. MM WILD-7 requires an ABMMP that is specific to the facility. The ABMMP is available with the Final RMPA/EIS.
B7-134	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	The mitigation plan (MM-Wild-7) does not say how long monitoring would occur and does not outline the specific avian monitoring plan. There are no maps or schedules relating to how frequent the monitoring would be. There should be a map of the project configuration with the monitoring strategy and schedule. There is also no information on mitigation attempts to make the project less hazardous for birds. The Pahrump Solar Project spaced solar panels further way from one another in an attempt to break up this lake effect. They also created a wavy surface in an attempt to break up the effect.	Information regarding the mitigation plan and how long monitoring would occur is included in the ABMMP, which is available with the Final RMPA/EIS and explained further in Master Response 3: Bighorn Sheep and Migratory Birds . The ABMMP describes the monitoring methods, reporting, and adaptive management. Facility maps are included in the ABMMP. The panel rows would be spaced approximately 20 feet (6 meters) apart, which is typical for single-axis tracking systems. Fixed tilt facilities are usually more closely spaced. There will be space between rows of trackers.
B7-135	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin	Wildlife, Migratory Birds, and Special Status Species	Solar panel textures could also be changed to reduce polarized glare and lake-like colors. This should also be in the Mitigation Measures. Panels can be tinted Earth tone colors as this article talks about: Colored Solar Panels Address Concerns of Aesthetics, Historic Preservation - https://www.solarreviews.com/news/coloredsolar-panels-address-concerns-of-aesthetics-historic-preservation/	The link provided does not function but was located through an internet search. The article identifies colored panels for rooftop applications. The article also cites that these panels have a degradation of performance over normal cells of about 20 percent, which would mean that more panels would be needed, and greater impacts. The option is not viable as the somewhat reduced visual effects to not outweigh the various effects from a larger Project footprint (e.g., desert tortoise, rare plants, air quality, erosion).

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B7-136	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	<p>Carcasses were placed out on desert sites to see how long they lasted. USGS Mathematician Manuela Hus to applied statistical sampling techniques to the data and applied detection curves for large, medium, and small birds, and was able to estimate when carcasses would no longer be observable. 453 transects were walked by biologists from March to May in 2015, in the Fremont-Kramer Area of Critical Environmental Concern (ACEC),</p> <p>Superior-Cronese ACEC, Ord-Rodman ACEC, Joshua Tree National Park, the Pinto Mountains, Chuckwalla ACEC, and Chocolate Mountains. So these surveys covered a huge swath of the California Desert with intensive surveys walking the ground searching the ground. Surveyors covered 37 square miles of relatively natural desert.</p> <p>In all this survey effort, only 6 avian mortalities were found: one adult red-tailed hawk, apparently killed by a great-horned owl as it lay below an owl nest; one juvenile red-tailed hawk; one rock wren that was apparently predated by a loggerhead shrike, as it was preserved on a shrike perch impaled on a cactus; and three feather spots of unknown species.</p> <p>This is far less than the avian mortality rate on solar projects. Some solar companies have implied that their bird mortality rate is not much greater than the natural background mortality rate in the desert, as before a project broke ground. But Fesnock's study refutes this strongly.</p> <p>The desert background mortality rate determined from line distance sampling in 2015 was 0.024 birds/acre/year. This could be broken down further to 0.004 large birds/acre/year, 0.0026 medium-sized birds/acre/year, and 0.0214 small birds/acre/year.</p> <p>But on three unnamed solar projects, Fesnock explained that the avian mortality rate increased to 1.7 birds/acre/year, 0.4 birds/acre/year, and 0.6 birds/acre/year.</p> <p>Fesnock concluded, "When compared to mortality rates from solar projects, background mortality does not appear to be a significant factor and could easily be accounted in the sampling design error rates."</p>	Refer to Master Response 3: Bighorn Sheep and Migratory Birds . The Draft RMPA/EIS acknowledged the adverse effects. The BBCS and ABMMP are provided as an appendix to the Final RMPA/EIS, and are designed to address detection of bird strikes at solar farms based on data from other solar facilities.
B7-137	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	<p>The BLM should also request that the applicant creates a Habitat Conservation Plan with the Fish and Wildlife Service for Threatened and Endangered Species including avian species and the desert tortoise. HCPs are planning documents required as part of an application for an incidental take permit. They describe the anticipated effects of the proposed taking; how those impacts will be minimized, or mitigated; and how the HCP is to be funded.</p>	An HCP is legally required under Section 10A of the ESA, when a project can have an impact on a federally listed species, but the project has no federal nexus. Since this Project requires a federal approval of the ROW from the BLM, it is subject to Section 7 of the ESA, including a formal consultation with the USFWS, preparation of a Biological Assessment and issuance of a Biological Opinion by the USFWS. Refer to Master Response 2: Mojave Desert Tortoise (under Take of Desert Tortoise) for more information on the requirements under the ESA.
B7-138	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	<p>BLM provided absolutely no analysis for how avian mortality at this very large-scale photovoltaic project would be mitigated. Only one mitigation measure is proposed in the DEIS:</p> <p>MM WILD-7: Bird and Bat Conservation Strategy Requirements</p> <p>The Bird and Bat Conservation Strategy shall include a robust systematic monitoring and adaptive management plan to assist in avoiding and minimizing Project impacts on migratory birds. The monitoring shall include overall annual mortality, species composition, and spatial differentiation based on established searcher efficiency and carcass persistence trials, being established through other studies at solar facilities, at the site and shall be designed to account for seasonal differences and fatality events of rare species.</p> <p>Not only is this Bird and Bat Conservation Plan deferred until after approval and public review, it is also very slim on details. Monitoring should be made public in monthly reports, and independent scientific reviewers used to monitor solar fields.</p>	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how bird impacts with solar panels are monitored. The BBCS and ABMMP are available with the Final RMPA/EIS. Section 3.3 Adaptive Management of the ABMMP identifies the procedures to undertake if monitoring shows substantial impacts to birds and bats. Under Section 3.3, it states "Based on the results of the mortality monitoring, should the agencies determine that the Project's impacts to birds or bats are substantial and/or that the Project is adversely affecting special-status species, then adaptive management actions to address the issues will be discussed; these actions could include installing bird flight diverters, changing Project components that have been identified as a mortality risk, or implementing other appropriate actions to address the issue(s) based on the data."

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B7-139	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	Both the Desert Sunlight and Genesis Project in California have reported a diversity of birds that have become avian mortalities and many of the birds were detected to have collision injuries.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how bird impacts with solar panels were addressed in the Draft RMPA/EIS, how impacts will be monitored, and the adaptive management strategy to address impacts.
B7-140	9/7/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Analysis Methods and Data	While we believe that the biologists hired to survey these projects are highly qualified individuals, we question the accuracy of the reporting because we have been told some biologists have lost jobs over reporting information. Interestingly, this was backed up at the last Desert Tortoise Council Symposium in 2016. Kathryn Simon of Ironwood Consulting told everybody that the politics of management from the solar companies often get in the way of accurate reporting. In the Symposium Abstracts, she reported “the political backing that supports energy development in the western part of the country has also resulted in the neglect or abuse of natural resources. While a great deal of effort is placed on properly siting and permitting a project, little or no oversight happens once the project enters construction and continues into operations and maintenance. This has led to a “power vacuum,” often filled by the project proponent's "environmental" staff who often ensure the least amount of information leaves the project and is reported to wildlife agencies and the public. Specific examples of such behavior are provided and suggestions made for biologists on the ground in achieving their goals of proper monitoring oversight.”	All the reports that were prepared by the Applicant or contractors were reviewed by the BLM for their adequacy and accuracy, as well as to verify that they met any relevant professional standards.
B7-141	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	These Gemini solar fields will look like lakes as they reflect blue sky, and with a lack of working mitigation measures, the No Action Alternative is the only good alternative to prevent avian mortality.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how bird impacts with solar panels were addressed in the Draft RMPA/EIS, including potential "lake effect" impacts, how impacts will be monitored, and the adaptive management strategy to address impacts. The commenter's preference for the No Action Alternative is noted.
B7-142	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	The Desert NWR encompasses six major mountain ranges and seven distinct life zones. The refuge website boasts 320 species of birds. To find out more, the avian enthusiast (birder) checks eBird (Cornell University https://ebird.org/hotspots) 17 and discovers a Hotspot red balloon at the refuge’s Corn Springs Field Station showing 297 species. Pulling back to a wider area the birder will find that the Gemini Project site is surrounded by birding Hotspots (see eBird map below). Closer investigation shows that this area of the Mojave Desert is rich with mountains and drainages which provide springs, ponds, and rivers such as the Muddy and Virgin Rivers that drain into Lake Mead. Also draining into Lake Mead from urban Las Vegas is the miles long Clark County Wetlands Park with 254 species. (See #3 in the map below - bold added)	The Desert National Wildlife Range (NWR) is located approximately 8 miles to the northwest of the Project area (refer to page 3-7 of the Land Use and Corridor Study, which was incorporated by reference into the Draft RMPA/EIS and page 3-7 of the Draft RMPA/EIS). The comment that the Project area is surrounded by mountain ranges is consistent with the information provided in the Draft RMPA/EIS. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how bird impacts with solar panels were addressed in the Draft RMPA/EIS, how impacts will be monitored, and the adaptive management strategy to address impacts.
B7-143	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range	Wildlife, Migratory Birds, and	The Gemini Project DEIS does not mention, much less evaluate, these rich watered habitats surrounding the Project. The DEIS bird surveys recorded 61 species. Discussion is confined to nesting species. Golden Eagle surveys were also done. However, Migratory bird species, protected under the Migratory Bird	Section 2.2 of the BBCS, available with the Final RMPA/EIS, describes the existing conditions, including the mountain ranges, the Muddy River, and the condition of the washes within the Project area. It is unclear as to what

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			Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Special Status Species	Treaty Act, may travel long distances in their yearly round trips along the Pacific Flyway between over-wintering and nesting sites. During their journeys they require places to rest and feed while avoiding predators. Birds fly, frequently high (miles)overhead, and the 25 to 50-mile buffer around the Project is inadequate to account for their needs, behavior, and visual range as they actively search for and spy out places to land with promising resources. The desert can be a particularly difficult area to traverse because of the heat. The song birds mainly travel at night and seek shaded refuge during the day. Waterbirds and shorebirds move from wetland to wetland. The DEIS is blind to these behaviors and needs.	<p>birds the commenter is referring to that do not "nest." Burrowing birds are addressed, including burrowing owl. The protections of the Migratory Bird Treaty Act were identified in Appendix E in the Draft RMPA/EIS and migratory birds considered were defined on page 3-58 of the Draft RMPA/EIS, "The USFWS defines a migratory bird as any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. Almost all birds found in the Project area are considered migratory birds."</p> <p>The analysis in the Draft RMPA/EIS adequately acknowledges that numerous migratory birds fly over the Project site. Adding the water bodies in larger areas of the state does not change the analysis or conclusions. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how bird impacts with solar panels were addressed in the Draft RMPA/EIS, how impacts will be monitored, and the adaptive management strategy to address impacts.</p>
B7-144	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	“Of the 61 species found, many were identified during migration and would not be expected to occur on the Project site during the breeding season.” (bold added) What happened to flying over the Project Site? The 10 observed nesting and the 10 potential nesters are desert species commonly with altitudinal rather than long distance migration patterns. For comparison, Pahrnagat NWR records 77 known nesting species. These species are also recorded nesting in the Complex refuges and surrounding eBird Hotspots. Nesting is only one segment of a bird’s yearly life cycle. Monitoring the cycle is essential to successful management.	<p>The paragraph cited provides background information on birds in the Project area. Nesting is a particular concern for construction, which is why nesting species are identified in the background information. Regardless of the number of species that could nest, MM WILD-8 in Appendix H addresses the need for surveys for any birds that are actually nesting on the site (regardless of species) to avoid impacts. Ongoing operational impacts are also addressed in the Draft RMPA/EIS (for bird collisions from migration). Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how bird impacts with solar panels were addressed in the Draft RMPA/EIS, how impacts will be monitored, and the adaptive management strategy to address impacts.</p> <p>Additionally, comparing Pahrnagat NWR to the Gemini Solar Project location is difficult. Pahrnagat boasts a large complex of wetlands, woodlands, and desert ecosystems. The number of species that can breed at Pahrnagat is much higher than what could breed at the Project site, which is primarily comprised of creosote-bursage habitat.</p>
B7-145	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	The panels, whatever their type and anti-reflective covering, will look different than the surrounding tan desert – could be mistaken for a lake or even a parking lot (both attract birds) - promising but not delivering a safe landing. Photovoltaic panels are stowed flat at night so, depending on the phases of the moon and starlight, the nocturnal fliers could be in jeopardy.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how bird impacts with solar panels were addressed in the Draft RMPA/EIS, how impacts will be monitored, and the adaptive management strategy to address impacts. Panels would be tilted towards the east at the night so that they are ready to absorb sunlight first thing in the morning. Panels would be adjusted to remain flat during times of strong wind.
B7-146	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and	Wildlife, Migratory Birds, and Special Status Species	Table 3.0-2 lists the Cumulative Projects in the Project Area. There are 15 solar energy projects ranging in size from Nellis Air Force Base on 140 acres (0.22 sqmi) to Yellow Pine Solar Project on 9,280 acres (14.6 sqmi). When operational, and until scientifically evaluated with published data to the contrary, all can be assumed to have a “lake effect” – avian mortality along the east Mojave Desert portion of the Pacific Flyway could skyrocket.	The cumulative effects to migratory birds was addressed on page 3-73, where it states "The Proposed Action would involve the use of equipment and vehicles that could directly or indirectly harm wildlife and migratory bird species during construction and operation, similar to the cumulative projects. The cumulative loss of habitat under various projects would adversely affect wildlife species. The Project would contribute to the adverse cumulative effect on wildlife and migratory birds. Implementation

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			Morongo Basin Conservation Association			of various plans and mitigations, including the Lighting Plan, PUP, and MMs WILD-1 through WILD-6, would reduce the Project’s contribution to the cumulative adverse effect."
B7-147	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	Waterbirds are vulnerable because they need to take off from water which is not available so they are panel bound. Shorebirds need the shallow edge, also not available.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how bird impacts with solar panels were addressed in the Draft RMPA/EIS, how impacts will be monitored, and the adaptive management strategy to address impacts. Waterfowl were not observed during the bird counts.
B7-148	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	This “Lake Effect” phenomenon, regardless of the number of dead birds reported found within pv and thermal solar sites, is drowning in carcasses and opinions but not scientific study. The agencies could, but do not, make a prudent decision to require that panel surfaces be patterned to destroy the smooth appearance of water. The “lake effect” is not studied or even mentioned in the Project’s Glint and Glare Report 2019.	<p>The panel rows would be spaced approximately 20 feet (6 meters) apart, which is typical for single-axis tracking systems. Fixed tilt facilities are usually more closely spaced. There will be space between rows of trackers which may break up the "lake effect." It is unclear what is meant by "patterned" surfaces. Changes to the panels and technology could reduce efficiency (see Master Response 3: Bighorn Sheep and Migratory Birds), which could require a larger impact area and thus, greater overall environmental effects. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how bird impacts with solar panels were addressed in the Draft RMPA/EIS, how impacts will be monitored, and the adaptive management strategy to address impacts.</p> <p>The BBCS, available with the Final RMPA/EIS, provides detailed results of monitoring and avian deaths for several solar facilities in Section 3.1. The monitoring plan is based, in part, on what is known on these other projects.</p>
B7-149	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Wildlife, Migratory Birds, and Special Status Species	Mitigation Measure WILD-7 is required for all Project Alternatives except the No Action Alternative. “The BBCS (Bird and Bat Conservation Strategy) would include a robust systematic monitoring and adaptive mangement plan for the Project to assist in avoiding and minimizing impacts on migratory birds, per MM WILD-7.” ²⁰ The Project is 11 sqmi and more than a qualified biologist should be required to realize the BBCS. To lift it above ‘just words’ this strategy must be transparent and include a robust plan that encompasses the 11 square miles Project area and surrounding footprint. The Plan should be developed independently of the developer with bonded funds to see it through for the 30 year life of the project. The bond should include funds for a BLM monitor to oversee all phases of data collection, analysis, and adaptive management.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how bird impacts with solar panels were addressed in the Draft RMPA/EIS, how impacts will be monitored, and the adaptive management strategy to address impacts. The comments regarding bonding are noted.
B7-150	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and	Wildlife, Migratory Birds, and Special Status Species	Ridgway's rail (Rallus obsoletus) 21 formarly known as the Yuma clapper rail has most populations considered threatened or endangered. Its habitat consists of salt marshes along the Californias coast, and brackish and freshwater marshes inland. The "Yuma" clapper rail inhabits freshwater marsh along the lower Colorado River and nearby areas. A Ridgway’s Rail was been found dead at a solar facility in Riverside County. Will this be a problem in Clark County? eBird Hotspots data shown below demonstrates that this Rail moves around and could be victimized by the solar array.	<p>Refer to Master Response 3: Bighorn Sheep and Migratory Birds for how this species has been addressed as part of the environmental review process. Yuma clapper rail is not expected on or near the Project site. Solar array impacts to avian species are described in Master Response 3: Bighorn Sheep and Migratory Birds.</p> <p>Informal consultation has been completed with USFWS for Yuma Clapper Rail. Three federally listed bird species may be affected by development of</p>

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			Morongo Basin Conservation Association			the Project including, Yuma clapper rail, yellow-billed cuckoo, and southwestern willow flycatcher. These three bird species are generally known to occur within riparian and aquatic habitats in the larger geographic region. There is no known population or suitable habitat of these species observed or documented within the Action Area. There are no perennial surface water or other aquatic features in the Action Area. The closest current documented record for these three species and their habitat is over 15 miles (24 kilometers) from the Action Area. The Biological Opinion concludes that the Project meets the insignificant and discountable definition and the Project may affect, is not likely to adversely affect the Yuma clapper rail.
B7-151	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	<p>We found biological soil crusts on the Gemini proposed project site on desert soils. What are the impacts of destroying these carbon-absorbing living soil communities? These will be driven over and crushed, disturbed by construction and maintenance.</p> <p>Soil biological crust is a mix of organisms that occupy and protect the surface of the soil in most desert ecosystems. The organisms often include filamentous and non-filamentous cyanobacteria, mosses, lichens, liverworts and fungi.</p> <p>Damage to intact desert soils with biotic crusts and the resulting increased siltation during flooding and dust are not adequately analyzed in the DEIS. Biological crusts protect the soil and hold weeds at bay.</p>	<p>Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of Project impacts on biocrust including for the Proposed Action and the alternatives.</p> <p>Disturbance of soil, including biocrusts, could result in increased water or wind erosion, which was analyzed in the Draft RMPA/EIS. Impacts related to fugitive dust are analyzed in Section 3.9: Air Quality and Climate Change of the Draft RMPA/EIS. The Project is required to comply with Section 94 of the Clark County AQRs, by preparing a Dust Control and Air Quality Plan. MM AQ-1 requires incorporation of several fugitive dust control measures into the Dust Control and Air Quality Plan, as described under Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust. The Project is also required to receive a Dust Control Permit during construction, as specified per the regulations. For the Proposed Action and action alternatives, fugitive dust from the Project site would be similar to or less than existing conditions with incorporation of fugitive dust controls during operation, accounting for the soil disturbance and areas of vegetation removal.</p> <p>Impacts from sediment transport and siltation are addressed in Section 3.5: Water Resources of the Draft RMPA/EIS. Sedimentation, which would encompass eroded biocrust from changes in overland flow and surface impacts, is addressed on page 3-39 under residual impacts, "Implementation of the mitigation measures, erosion control best management practices (BMPs), and a Stormwater Pollution Prevention Plan (SWPPP) would reduce potential adverse effects from flooding or increased erosion and sedimentation caused by construction, O&M, and decommissioning. Implementation of the mitigation measures would not be expected to result in any unaccounted-for effects. Residual erosion effects from construction, O&M, and decommissioning would be limited to some increases in downstream transport of fine sediment."</p> <p>The loss of annual carbon uptake associated with disturbance desert soils and vegetation has been incorporated into the operational emissions analysis as part of the Final RMPA/EIS. Annual carbon sequestration rates in desert environments vary depending on the study from 0.16 metric tons carbon per acre per year to 2.52 metric tons carbon per acre per year (CEC 2013). Refer to Table 3.9-4 for the range of lost carbon sequestration over the lifetime of the Proposed Action and the net GHG emissions offset associated with the Project. The Project would result in a net positive offset of GHG emissions compared to generation of equivalent energy from a non-renewable power plant.</p>

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B7-152	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Driving over and disturbing 7,000 acres of desert will be highly destructive to sensitive biological soil crusts, as well as rare plants, and fossorial animal species such as kangaroo rats, pocket mice, burrowing owls, kit foxes, rattlesnakes, tarantulas, and desert tortoises.	<p>Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants and biocrusts were addressed in the Draft RMPA/EIS. The analysis of impacts to biocrust was identified for both the All Mowing and the Hybrid Alternative in the Draft RMPA/EIS on pages 3-59 and 3-64, respectively. The analysis is included in the Site Restoration Plan, included as an appendix to the Final RMPA/EIS.</p> <p>Impacts to wildlife is addressed in the Responses to Comments B7-44 and B-7-45. Impacts to desert tortoise are addressed in Section 3.8: Threatened, Endangered, and Candidate Species. The Proposed Action has the greatest potential to impact and result in loss of desert tortoise, as stated on page 3-82 of the Draft RMPA/EIS, "Direct effects include the take [loss] of up to the estimated 215 adult tortoises (and the estimated 900 or more juveniles) expected to be found on the Project site during construction; death or injury to tortoises within the construction areas of the gen-tie line routes; and permanent loss of desert tortoise habitat." The mowing alternatives would reduce these impacts.</p>
B7-153	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Alternatives	This is one of the more significant negative impacts of the project, and why we support a Distributed Generation Solar Alternative utilizing rooftop solar and parking lot solar structures, in order to avoid this needless ground disturbance of the Mojave Desert.	Refer to Master Response 1: Alternatives for a discussion of the alternatives review process under NEPA and for the considered alternatives and requirements. Master Response 1: Alternatives also addresses why distributed generation solar also was rejected from detailed consideration.
B7-154	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Threatened, Endangered, and Candidate Species	<p>One mitigation measure in the DEIS for air quality seems to implicate dust palliatives in possible desert tortoise significant impacts, potentially we believe to the health of tortoises: MM T&E-1: Dust Palliative Study Funding In accordance with MM AQ-1, the Applicant shall contribute funds to a BLM study to understand the effects of dust palliatives mobilized in stormwater runoff on the health of desert tortoises.</p> <p>This seems to indicate the chemicals in these palliatives still has unknown impacts outside of the project footprints on utility-scale solar projects, and therefore threats could extend well outside the direct ROW and into the surrounding desert due to flash flood events carrying debris, sediment, and chemicals outside tortoise exclusion fences. This is unacceptable in such a high-density tortoise population.</p>	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Herbicides and Dust Palliatives) for a discussion of how dust palliatives impacts on desert tortoise were addressed in the Draft RMPA/EIS.</p> <p>The comment correctly quoted the measure and the impact is adequately disclosed in the Draft RMPA/EIS. Page 3-84 of the Draft RMPA/EIS explains, "Other indirect effects include...and runoff of contaminated stormwater from spills of hazardous materials (e.g., petroleum products, herbicides, dust palliatives). These indirect effects from the Proposed Action would be addressed through implementation of Project design features and mitigation that control soil erosion, stormwater runoff, and water quality. The Applicant would implement the Worker Environmental Awareness Plan (WEAP), as well as the Raven Management Plan, Site Restoration Plan, Integrated Weed Management Plan, PUP identifying the allowable herbicides and applications (as discussed in Chapter 2: Proposed Action and Alternatives), SWPPP, Stormwater Quality Monitoring Program, Spill Prevention, Control, and Countermeasure (SPCC) Plan, Health and Safety Plan (including waste management), and Lighting Plan to reduce indirect adverse effects on desert tortoise. While effects can be reduced, they may not be sufficiently minimized even with mitigation."</p>

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						Master Response 2: Mojave Desert Tortoise (under Herbicides and Dust Palliatives) also addresses dust palliative use and potential for mobilization in stormwater.
B7-155	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Air Quality and Climate Change	Other air quality mitigation measures in MM-AQ-1 attempt to control emissions by incorporating multiple methods for dust suppression (i.e., water, gravel, and/or regulation-compliant palliatives) on unpaved, disturbed areas where no natural vegetation occurs. These details should be worked out now, and not deferred until after project approval. A full Dust Control and Air Quality Plan should be written now and analyzed as part of the Draft RMPA/EIS, as a supplement.	Refer to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust that addresses Clark County's jurisdiction over dust control and the permitting requirements.
B7-156	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Air Quality and Climate Change	Nevada large-scale solar projects have recently had a poor record in violating air quality controls, as we have recorded in photographs such as at the Sunshine Valley Solar Project in Amargosa Valley. This mowed-vegetation project repeatedly has fine particulate whirlwinds, and dust clouds emerging from disturbed desert surfaces in construction zones. Despite water trucks attempting to water-down loose dirt, the solar project was too large to control all dust. Construction continued on windy days, yet even on mild breezy days we saw wind-blown dust and clouds of fine particulates from disturbed ground in the construction site. The Gemini Solar Project is proposed to be 8 or 9 times larger, and the dust emissions could be similarly uncontrollable.	The comment is noted; however, the mitigation is proposed to reduce dust. Dust generation would be reduced in mowed vegetation. Refer to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust that addresses Clark County's jurisdiction over dust control and the permitting requirements.
B7-157	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Air Quality and Climate Change	Mitigation measures such as this from the DEIS are far too vague to be useful or prevent air quality hazards: "Incorporate environmental inspection and monitoring measures and other relevant plans to monitor and respond to air quality during construction, operations, and decommissioning, including adaptive management protocols."	The Project is required to comply with Section 94 of the Clark County AQRs, by preparing a Dust Control and Air Quality Plan. MM AQ-1 requires incorporation of several fugitive dust control measures into the Dust Control and Air Quality Plan. The Project is also required to receive a Dust Control Permit during construction, as specified per the regulations. Refer to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust that addresses Clark County's jurisdiction over dust control and the permitting requirements.
B7-158	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Air Quality and Climate Change	Removal of stabilized soils and biological soil crust creates a destructive cycle of airborne particulates and erosion. As more stabilized soils are removed, blowing particulates from recently eroded areas act as abrasive catalysts that erode the remaining crusts, thus resulting in more airborne particulates.	Refer to Response to Comment B7-157.

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B7-159	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Public Health and Safety	We are concerned that industrial construction in the region will compromise the air quality to the point where not only visual resources, but public health will be impacted. Epidemiologists investigated an outbreak of valley fever that had sickened 28 workers at two large solar power construction sites in San Luis Obispo County. ²³	The commenter's concerns are noted. The Applicant will implement BMPs for dust control, including wetting down areas that will be graded to avoid dust becoming airborne. Refer to page 3-171 of the Draft RMPA/EIS for a discussion of impacts associated with valley fever, "MM AQ-1 requires the development and implementation of a Dust Control and Air Quality Plan, which would reduce fugitive dust and minimize the risk to workers of contracting valley fever." Dust generation during operation of the facility for the All Mowing and the Hybrid Alternatives would be less than baseline conditions, as shown on Table 3.9-6 on page 3-100 and Table 3.9-8 on page 3-102.
B7-160	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Air Quality and Climate Change	The technical report, "Air Quality and Climate Change", does not account for the CO ₂ as it is inhaled above ground and exhaled below ground and stored in a biological web of mycorrhiza.	Refer to Response to Comment B7-23, assuming this comment is referring to carbon sequestration or stock. The methods utilized in the technical report follow industry standard.
B7-161	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Air Quality and Climate Change	Over the 30-year life of the Project 42,750 Metric Tons of CO ₂ will be emitted instead of sequestered. Since the functioning underground biological web was destroyed during construction of the project – regardless of the alternative chosen – that number can reasonably be multiplied again by an additional hundreds, if not thousands, of years until complete recovery. In making this calculation consult Evans for the increased amount of atmospheric CO ₂ anticipated by 2050. In addition, the land area has stored carbon, possibly for millennia, which should be accounted for.	Refer to Response to Comment B7-23. The offset of GHG from solar power greatly outweighs equipment or claimed carbon sequestration losses. These losses are reduced even further through the mowing alternatives.
B7-162	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Water Resources	And finally, groundwater for the project will be pumped from a carbonate aquifer. This must also be studied for effect.	Impacts from groundwater use were addressed in the Draft RMPA/EIS on pages 3-38 to 3-42. The impacts to the aquifer were studied, which was presented in the Groundwater Impact Analysis Report, incorporated into the Draft RMPA/EIS by reference and provided on the ePlanning website.
B7-163	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range	Project Description	The Proposed Action would include traditional disk and roll development methods to remove vegetation across the 11 square-mile site. The Hybrid Alternative would use traditional methods on approximately 2,500 acres (4 square miles) and mowing leaving vegetation and natural land contours in place on 4,600 acres (7 square-miles).	Equipment type and preliminary engineering drawings were provided with the POD, which was incorporated by reference into the Draft RMPA/EIS. A more appropriate measure of solar panel components are total array blocks. A typical array block is shown in Figure 1-3 of the POD, and the

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			Watch, Western Watersheds Project, and Morongo Basin Conservation Association		The All Mowing Alternative uses mowing across the landscape. (11 square-miles). Mowing is not a gentle process as seen below. When calculating disturbance it is important to know how many panels and how they would be mounted on trackers across the project site. As an estimate we used the data provided by NextEra for the 482-acre (.75 square-miles) Ord Mountain Solar Project San Bernardino County CA. The Gemini site is 14.7 times the Ord Mt. site. Ord Mt. Solar has 250,000 panels mounted on 3,000 trackers; 14.7 X 250,000 = 3,675,000 panels 14.7 X 3,000 = 44,100 trackers 7,100 acres /44,100 trackers = one tracker installed every 0.16 acre.	total number of array blocks was shown in Figure 1-2. The Draft RMPA/EIS, however, appropriately addressed the impacts of the entire area that could be developed (approximately 7,100 acres [2,873 hectares]) versus focusing on the number or area of individual trackers. This overall acreage of effect approach is more appropriate given the types of impacts experienced (e.g., loss of habitat).
B7-164	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Although mowing could or not kill all the native vegetation it will damage the underground biological sequestering web which will take centuries to recover.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance. Mowing would not substantially damage vegetation and would not impact underground root systems. The BLM does not have evidence that microorganisms or subsurface plant and microbiota symbioses would be negatively impacted by mowing. Other projects that have used drive and crush practices have had positive responses from vegetation communities post-construction.
B7-165	9/6/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Reviewing Abella and Newton (2009), the authors actually state that native plant restoration is problematic and very experimental in the Mojave Desert, and much more study needs to be done: <i>A systematic analysis of 23 revegetation studies reported in 19 publications revealed that many native shrub species (e.g., Ambrosia dumosa, Atriplex spp., Larrea tridentata) can be consistently established (≥ 50% survival) through planting, even in years of below average precipitation. Proper plant care and supplemental treatments may be needed to avoid heavy mortality of some species, however, in inhospitable conditions. Seeding also resulted in plant establishment, at least during the duration of studies which were ≤ 5 years. Several treatments, such as cages or shelters, increased plant survival and vigor in planting studies, although these treatments require cost/benefit analyses. A key aspect of revegetation research in general is that many factors associated with plant stock (e.g., size and root development of plants), methods (e.g., drill versus broadcast seeding), treatments (e.g., irrigation, cages), and site factors and climate can interact with species performance and treatment effectiveness to affect revegetation outcomes. Interactions among these factors have been little studied, and revegetation studies are well suited to factorial experimental approaches. Another important research need is determining which revegetation prescriptions can meet particular functional objectives (such as competing with exotic plants or reducing soil erosion), and what functional benefits arise from different revegetation approaches. Of the 19 publications that met inclusion criteria for this review, 47% were published prior to 1988, only 16% since 2000, and none after 2001 (table 1). Many early revegetation projects focused on exotic species in southwestern United States arid lands (Cox et al. 1982). There also are relatively recent examples of using persistent exotic species in revegetation projects, including the invasive grasses Schismus barbatus (Mediterranean grass) and Bromus rubens (Clary and Slayback 1983, Jackson et al. 1991, Grantz et al. 1998a). In our view, research on native species and the contexts and treatments that allow them to be successfully in revegetation is still in its infancy, as is propagating large quantities of candidate revegetation species. Revegetation, and funding for it, will likely only become increasingly important with increasing disturbance from expanding human populations and disturbance, climate change, and new disturbances like landscape-scale wildfires (Lovich and Bainbridge 1999). The systematic review, evidence-based approach employed here for assessing the status of knowledge of revegetation in the Mojave Desert may be useful in other regions and for re-evaluating the species and treatment effectiveness data derived from future research.”30 (emphasis ours)</i>	Regrowth or restoration of native vegetation under the Proposed Action is acknowledged in the Draft RMPA/EIS as being adverse, as stated on pages 3-52 to 3-53: "With the soil disturbance and compaction from constructing the solar development areas, most of the native seed bank in the soil would not be viable, so adjacent seed sources would be needed for restoration, resulting in an adverse, indirect impact on adjacent vegetation communities where the seeds are sourced. Vegetation communities could take as long as a century to naturally and fully recover to pre-disturbance conditions. Given the number of weeds growing on site and the disturbance proposed, the restoration time may be even longer. The cacti and yucca removed from the site would probably never recolonize this 7,100-acre (2,873-hectare) area. Weed control would be difficult and inhibit restoration efforts. It is probable that the sensitive plant communities would not be able to re-establish, especially in the case of Nye milkvetch, where the soils are completely altered." The impact is reduced in mowed areas as restoration would not needed since the native vegetation would be maintained from construction throughout the life of the Project, as stated on page 3-58 of the Draft RMPA/EIS, "Since vegetation would be maintained on the site throughout the life of Project, recovery after decommissioning would be faster than under the Proposed Action. Native seed banks and soils would be maintained over most of the Project site."

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B7-166	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	Vegetation and Jurisdictional Waters	Perhaps the funding and experience will be available when the Project developer/owner is ready for the 11 square-miles to be restored. There is no mention of bonding and monitoring to support what will be a long and costly effort. Any Site Restoration Plan should not be deferred until after full public review.	The Decommissioning and Site Reclamation Plan, and the Site Restoration Plan have been included for posting on ePlanning website with the Final RMPA/EIS. The Decommissioning and Site Reclamation Plan includes the monitoring and standards that must be met. The degree of reclamation needed is greatly reduced through the mowing alternatives as compared with the Proposed Action, since vegetation is maintained on site for the life of the facility.
B7-167	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	NEPA and Decision Process	The Draft Environmental Impact Statement is written for the purpose of fast-tracking the approval of this project. The DEIS is incomplete and lacks basic information that would be useful for stakeholders to make meaningful comments.	The BLM has prepared an RMPA/EIS to be compliant with NEPA and SO 3355. A thorough analysis that included numerous cooperating agency consultations was undertaken. The analysis in the Draft RMPA/EIS was supported by an additional 22 technical studies and analyses, available on the BLM's ePlanning website. Environmental consequences were extensively studied and considered in compliance with NEPA. Cultural resources were evaluated for their eligibility to the NRHP under Title 54 USC. § 300101, et. seq., commonly known as the NHPA of 1966, as amended, and Title 54 USC § 306108, commonly known as Section 106 of the NHPA (Section 106).
B7-168	9/5/2019	Emmerich, Kevin	Conservation Groups: Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association	BLM Management	The Purpose and Need Statement is favorable to the developer and the BLM failed to review a full range of alternatives. A broader Purpose and Need Statement, reduced footprint and off-site alternatives should have been included in the DEIS. While we request a No Action Alternative for Gemini Solar, the DEIS is designed to make approval of the project quick and simple for the BLM. Therefore, we request that the BLM draft a Supplemental Environmental Impact Statement which includes a broader Purpose and Need Statement as well as a full range of reasonable alternatives. This would enable the BLM to reject this application more easily and select a No Action Alternative.	The commenter's preference for the No Action Alternative is noted. Refer to Master Response 1: Alternatives for a discussion of the purpose and need and why it is adequate under NEPA. The purpose and need is to respond to the application submitted by the Applicant under FLPMA. The BLM prepared an objective analysis of the Project as required under NEPA to support the decision to approve or deny the application. The master response also includes a discussion of the process for consideration of alternatives in compliance with NEPA.
B8-1	9/5/2019	Gilman, Katie	The Wilderness Society	Alternatives	As mentioned previously, the Gemini Solar project is outside of an existing DLA and is considered a “grandfathered project.” The result in this case is a project proposed in an intact area that has higher overall resource conflicts. In comparison to the Dry Lake DLA the potential for unavoidable impacts is greater. BLM should analyze alternative project layouts to avoid impacts to sensitive resources and values that are only present in certain portions of the project area.	Refer to Master Response 1: Alternatives for a discussion of how alternatives were considered. The Solar PEIS (2014), which went through extensive review and a public process, did not preclude this area for solar development, as it identified it as a variance area. One of the alternatives screening criteria was intended to identify whether the potential alternative would avoid or substantially lessen effects compared to the Proposed Action. Only alternatives that meet all screening criteria, including this criterion, were carried forward for analysis in the EIS. Adequate space for a 690-MW solar facility is not available in the Dry Lake solar energy zone. Through the alternatives screening, two action alternatives to the Proposed Action were identified, that are practical and feasible, and reduce effects compared to the Proposed Action. The Alternative Report, incorporated by reference into the Draft RMPA/EIS, also explains why the 7,100 acres (2,873 hectares) were chosen out of the 44,000-acres (17,806-hectare) within the original application area and

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						while this area has several resources, the resources are found across most of the application area. Master Response 1: Alternatives provides additional information of the alternative evaluation process.
B8-2	9/5/2019	Gilman, Katie	The Wilderness Society	Threatened, Endangered, and Candidate Species	BLM must require measures to minimize impacts from Gemini Solar. The EIS development alternatives that include mowing with the re-introduction of desert tortoise after the completion of construction may be the best alternative, however, it would be appropriate to follow the same standard of compensatory offsite mitigation as the Dry Lake DLA.	The Draft RMPA/EIS identified mitigation measures that are required to be implemented, as detailed in Appendix H. The mitigation measures are identified to minimize or avoid each adverse effect of the Project analyzed in the Draft RMPA/EIS, including Mojave desert tortoise. In accordance with Instruction Memorandum 2019-18, "the BLM will not impose, and will not build mechanisms for it to enforce, mandatory compensatory mitigation into its official actions, authorizations to use the public lands, and any associated environmental review documents, including, but not limited to, permits, rights-of-ways, environmental impact statements..." Compensatory mitigation; however, can be imposed under the ESA and the Project is undergoing review under Section 7 of the ESA concurrent to the NEPA process. The Biological Opinion issued by the USFWS will identify the additional measures required. Refer to Response to Comment B7-111 for a discussion of remuneration fees identified in the Biological Assessment, available with the Final RMPA/EIS.
B8-3	9/5/2019	Gilman, Katie	The Wilderness Society	Alternatives	Furthermore, the mowing is experimental and there is little science available supporting the effectiveness of this approach. Unavoidable impacts are likely, thus should this process move forward research should be done to use in future, properly sited projects in DLAs.	Refer to Master Response 1: Alternatives for a discussion of the mowing methods proposed, acknowledging it is a new method and the long-term monitoring that will be employed. Refer to Response to Comment B8-2 for the siting of the Project and the DLAs.
B8-4	9/5/2019	Gilman, Katie	The Wilderness Society	Mitigation and Design Measures	BLM must analyze and require compensatory mitigation to offset unavoidable impacts to important and sensitive resources and values. In general, BLM should use the regional mitigation strategy (RMS) for the nearby Dry Lake DLA as a starting point to inform mitigation fees and action for Gemini Solar. BLM should direct mitigation fees from Gemini Solar into implementation of the Dry Lake RMS; if there is a portion of the Gemini Solar mitigation fee associated with resources and values present at Gemini Solar that were not present at Dry Lake, that portion of the fee should be directed towards other mitigation actions that would specifically address those impacts.	Refer to Response to Comment B8-2. The RMS can no longer be applied under Instruction Memorandum 2019-18. Numerous mitigation measures to reduce effects are provided in Appendix H. Section 7 consultation is underway and the Biological Opinion will include additional requirements and measures to reduce impacts to desert tortoise.
B8-5	9/5/2019	Gilman, Katie	The Wilderness Society	Mitigation and Design Measures	We recommend using the best design measures possible and offsetting the impacts through compensatory mitigation/offsite mitigation using the Dry Lake DLA as a baseline from which to work.	Refer to Response to Comment B8-2.
B9-1	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Old Spanish National Historic Trail	p. 2 2nd paragraph, Text states "...the Old Spanish National Historic Trail, which passes through the Project area....". In the DEIS there is explanation that use of "Old Spanish National Historic Trail" refers specifically to the congressionally approved route. The broader analysis including historical evidence, cultural resource surveys and the Old Spanish Trail Association - NV Chapter's interpretation all point to a "corridor" concept spanning the entire valley with most ground evidence found west of the project area, specifically west of Interstate 15, (Gemini being east of Interstate 15) outside the project footprint.	The comment is correct that the physical evidence of the trail appears to be stronger to the west of the I-15. Page 2-3 of the BLM Manual 6280 Inventory and Analysis, incorporated into the Draft RMPA/EIS by reference, shows a photo of the obelisk monument located near Apex (to the west I-15) commemorating a known section of trail with physical evidence. The monument signifies the period of significance as from 1829 to 1848 in that area near Apex. This does not preclude the fact that some travelers may have used the Project area. The 2010 ARRA report identified a 5,843-foot (1,781-meter) segment as eligible for listing in the NRHP (refer to page 3-124 of the Draft RMPA/EIS), even though this segment is currently a modern, well-used two track and no other physical evidence of the Old Spanish Trail was identified during surveys for the Project. The OSNHT in the Project area is a land use designation that must be considered in the NEPA analysis, even if there is very limited or no remaining physical evidence that this area was used. Per the Trails System Act of 1968, it must be considered as a congressionally designated corridor, and the impacts of the Project on the designation addressed.

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B9-2	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Project Description	p. ES-2, Alternatives, Traditional methods are defined within the RMPA/EIS as "development methods which include disk and roll to remove vegetation in the solar arrays." The definition is not included within Section ES-2. The document would benefit from a clear definition of "traditional methods" in the context of the Project prior to Section 2.1. The distinction between "traditional methods" and mowing is not clear.	A brief description of traditional methods has been added in the Executive Summary for clarity.
B9-3	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Alternatives	Table ES-2 and Section 2.4 (Federal Lead Agency Preferred Alternative), In comparing effects between the Proposed Action, the All Mowing Alternative, and the Hybrid Alternative within the summary table, the text indicates that the Proposed Action will cause substantially more impacts than either of the other two alternatives. The overall conclusion of this table is that the All Mowing Alternative is the environmentally superior alternative and will thus be identified as the "environmentally preferable alternative" within the ROD. The Hybrid Alternative is the second most environmentally superior option, and the Proposed Action is the least environmentally sound option. Section 2.4 states that the Preferred Alternative is the Hybrid Alternative.	The lead agency's preferred alternative is not necessarily the environmentally preferable alternative or the Proposed Action. In accordance with 40 CFR 1502.14(e), an agency must identify the preferred alternative in the EIS. The agency's preferred alternative can change between the Draft EIS and Final EIS. The ROD is required to identify the approved action and the environmentally preferable alternative (40 CFR 1505.2(b)). The approved action is not required to be the environmentally preferable alternative.
B9-4	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Table ES-2, p. ES-5 Vegetation and Jurisdictional Waters, Milkvetch habitat was avoided based on review of the botanical survey results.	Threecorner milkvetch habitat is defined as areas identified by the Hamilton and Kokos model as containing "known occurrences". Survey data can only be used for presence/absence analysis when multiple years of surveys have been completed, especially for annual species, and especially for annual species in the Mojave Desert, which has extremely variable precipitation patterns. Analysis of habitat loss using only one year of survey data is likely to vastly underestimate habitat loss for this species. Survey data can vary year to year due to fluctuations in weather (e.g., rainfall, temperature) and changes in aeolian processes. The model generally aligns with the current threecorner milkvetch occupancy based on the 2018 survey data and is assumed to be a good predictor of possible threecorner milkvetch occupancy in future years. The commenter is correct that development area F was not considered for any alternative due to a high density of threecorner milkvetch found during surveys, as well as the presence of suitable habitat determined by the Hamilton and Kokos model.
B9-5	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Table ES-2, p. ES-5 Vegetation and Jurisdictional Waters, This statement is applicable to threecorner milkvetch as well as Nye milkvetch.	The commenter is correct, and the statement has been expanded to encompass both milkvetch species.
B9-6	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Table ES-2, p. ES-5 Vegetation and Jurisdictional Waters; In all columns, “may” should be used in lieu of “would.” For example, “[t]he spread of invasive species may also be an impact of the All Mowing Alternative.”	Based on the BLM's experience with other utility-scale solar projects, spread of invasive species is a guarantee due to the movement of equipment and vehicles throughout the site, as well as areas of vegetation removal, such as along access roads. The All Mowing Alternative would result in less spread of invasive species compared to the Proposed Action, but it would still occur.
B9-7	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Table ES-2, p. ES-5 Vegetation and Jurisdictional Waters; The number of yucca on site is insignificant. Two individual plants were observed.	The comment is noted. Based on extrapolation, 32 Mojave yucca are located in the Study Area. The Proposed Action and action alternatives would directly impact any Mojave yucca within the development areas.
B9-8	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Table ES-2, p. ES-6 Threatened, Endangered, and Candidate Species; For all alternatives, all tortoises moved would be “taken”.	As stated in Section 3.8: Threatened, Endangered, and Candidate Species, the ESA forbids acts that result in the “take” of listed species without a permit, per Section 7. The term “take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such activity (16 USC § 1532[18]). The Proposed Action and action alternatives would require an incidental take statement. The comment is correct that all moved tortoise would be "taken" under all alternatives. The difference is that the tortoises under the Proposed Action would not be expected to survive. The term "take" has been replaced or augmented with

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						clearer language throughout the Final RMPA/EIS to better describe the differences between the action alternatives and the Proposed Action.
B9-9	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	The take of tortoises from the Proposed Action suggests that this is a mortality take, when tortoises similarly moved distantly from the other alternatives would not be considered a mortality take. See discussion below for Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-82, Paragraph 4.	A sufficient area for off-site translocation is not available for the 215 adult tortoises and approximately 900 or more juvenile tortoises within the development areas proposed for construction under the Proposed Action. It is not feasible to translocate these tortoises and as stated on page 3-84 of the Draft RMPA/EIS, the Proposed Action would result in the "loss of up to 215 adult desert tortoises". The action alternatives would result in a considerably less loss (mortality) take of tortoises as compared with the Proposed Action, with successful reoccupation. The term "take" has been replaced or augmented with clearer language throughout the Final RMPA/EIS to better describe the differences between the action alternatives and the Proposed Action. Clarifications on take of desert tortoise are also provided in Master Response 2: Mojave Desert Tortoise (under Take of Desert Tortoise).
B9-10	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 1.6 (Relationship to Other Policies, Plans, and Programs) Table 1.6-1; The project would not include any commercial salvage of native cacti or yucca. Remove the Native Cacti and Yucca Commercial Salvaging and Transportation Permit from the table.	<p>Cacti and yucca would be salvaged in accordance with MM VG-1 and the Site Restoration Plan. Digging up cactus and yucca on public or private land in Nevada is a regulated activity. On federal land owned by the BLM, tags are required for commercial possession (Nevada Revised Statutes [NRS] 527.090). In accordance with NRS 527.060 to 527.120 "commercial purposes means the removal or possession of six or more of such plants in any 1 calendar day or the removal or possession of less than six of such plants each for 7 or more consecutive calendar days." The cacti and yucca salvaged would qualify as for "commercial purposes" due to the number of cacti and yucca projected to be salvaged. Appropriate permits would be sought to permit possession and salvaging of cacti and yucca.</p> <p>Cacti and yucca on BLM land are managed under the BLM's forestry program. Where mowing would occur, cacti and yucca would be left on-site in mowed areas. In areas of temporary disturbance, cacti and yucca would be salvaged, stored, and then transplanted back during restoration, in accordance with the Site Restoration Plan. In areas developed using traditional methods or graded, cacti and yucca would be salvaged and replanted, or made available to the public for purchase, and then to commercial users for purchase, per BLM's forestry program guidance. Cacti and yucca not sold in permanent disturbance areas would be paid for per the Site Restoration Plan and BLM forestry program guidance.</p>
B9-11	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Project Description	This section should note that the precise location of individual project features, such as the O&M building and substations, may be adjusted during final engineering to enhance function and efficiency and comply with mitigation measures, provided the revised locations are within the existing impact area and do not generate previously undisclosed impacts. Sec. 2.2, p. 2-2;	The BLM is aware that some changes to the site design would occur between preliminary engineering and final engineering to address resource constraints. Language has been added for clarity that the precise locations of the Project components may change.
B9-12	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Project Description	Sec. 2.2, p. 2-2; This section should also note that the use of water tanks in lieu of ponds would be an acceptable variation in project design.	The language in the Draft RMPA/EIS has been revised to allow for the use of temporary, water storage tanks or water storage ponds.
B9-13	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Editorial	Sec. 2.2.4, p. 2-10; Correct the second to last sentence: "In traditional development areas, mowing disk and roll and panel construction (including construction methods, equipment, workforce, and schedule) would occur as described for the Proposed Action."	The mention of mowing in regard to the Proposed Action has been revised to reference disk and roll.
B9-14	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Land Use	Section 3.1 (Land Use) Sec. 3.1.2, p. 3-13; This is only partially accurate, as the types of direct and indirect effects would be the same but they would be different proportionally.	The commenter does not provide evidence that effects related to the Hybrid Alternative would differ from the Proposed Action. As analyzed in Section 3.1: Land Use, the same conflicts with land use authorizations and

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						transportation corridors would occur related to the proposed gen-tie lines and between the Hybrid Alternative and the Section 368 COC and Black Mountain - Crystal utility corridor. The All Mowing Alternative, because it does not include the majority of development area D, does not have impacts on the Section 368 COC.
B9-15	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Recreation	Section 3.2 (Recreational Resources) Sec. 3.2.2, p. 3-16; The document contains no basis upon which to evaluate this assertion.	The identified phrase from the Draft RMPA/EIS on page 3-16 regarding OHV access in Clark County is based on scoping comments provided by the OHV community. OHV access is generally not added to public lands, but actions involving ROWs or protections for sensitive resources removes acreages available to OHV, hence "diminishing."
B9-16	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.1, p. 3-43; There is no basis in the document to support this claim.	The statement regarding the unusually high density of noxious and non-native weeds on the Project site is based on the BLM's extensive knowledge of BLM land in the Southern Nevada District and botanical survey results compared with existing conditions throughout the Southern Nevada District. Sahara mustard is particularly prone to invade areas with sandy soils (e.g., threecorner milkvetch habitat). Sahara mustard has invaded the I-15 corridor and moved into adjacent habitats, notably sandy soils. Botanical survey results support that this area has been invaded and colonized by Sahara mustard and other weed species.
B9-17	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.1, p. 3-44; There is no basis provided to support the density claim	The statement regarding the extremely high density of Sahara mustard on the Project site is based on the BLM's extensive knowledge of BLM land in the Southern Nevada District. Refer to Response to Comment B9-16.
B9-18	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.1, p. 3-46; The basis for this conclusion completely ignores better and more specific data for this analysis. The 2011 GIS based models have a “macro” level application. Intensive biological field surveys are a better micro level application. The intensive project specific botanical surveys from 2018 are a better and more accurate source for analysis. Even for the purpose and basis of prediction.	Refer to Response to Comment B9-4. Modeled habitat was used by the BLM due to the fact that the number of individuals found may vary from year-to-year.
B9-19	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-48; Models should be used only in absence of intensive field surveys. Models are always less accurate but are more cost-effective which is why they are used. The 2018 botanical surveys for Gemini should be the source of analysis.	Refer to Response to Comment B9-4. Modeled habitat was used by the BLM in this case due to the fact that the number of individuals found may vary from year-to-year.
B9-20	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-48; In addition, the Nevada Revised Statutes (NRS) protect species only not acres of habitat. “NRS 527.270 List of species declared to be threatened with extinction; special permit required for removal or destruction. A species or subspecies of native flora shall be regarded as threatened with extinction when the State Forester Fire warden, after consultation with competent authorities, determines that its existence is endangered and its survival requires assistance because of overexploitation, disease or other factors or because its habitat is threatened with destruction, drastic modification or severe curtailment. Any species declared to be threatened with extinction shall be placed on the list of fully protected species, and no member of its kind may be removed or destroyed at any time by any means except under special permit issued by the State Forester Firewarden.”(http://forestry.nv.gov/forestry-resources/state-threatened-and-endangers-species-program/)	Threecorner milkvetch is listed not only by the State of Nevada as Critically Endangered/Fully Protected, but also by the BLM as Sensitive. The BLM Manual 6840 directs the BLM to manage BLM sensitive species and habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species' habitat. The Project is located on BLM land. As such, the BLM has the directive to manage the land in an effort to minimize the threat to BLM sensitive species' habitat, including threecorner milkvetch. Refer to Response to Comment B9-4 for details on why use of modeled threecorner milkvetch habitat is used, due to the likelihood that one year of survey data would vastly underestimate habitat loss for this species. Addressing the effects on threecorner milkvetch habitat and requiring mitigation is appropriate and within the BLM's jurisdiction. MM VG-2 has been revised to more broadly reflect that the Nevada Division of Forestry permit applies to threecorner milkvetch impacts, as determined by the Nevada Division of Forestry. The other components of MM VG-2 that pertain to minimizing effects on threecorner milkvetch habitat are acceptable.

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B9-21	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-48; There is no reference to support this claim. The project site is actually along the southern range of the population range. Larger actual and modeled habitat exist to the northeast and east near Lake Mead.	Two sets of threecorner milkvetch data were used in the analysis. The Hamilton and Kokos threecorner milkvetch habitat data and the Nature Conservancy population group data. The information on page 3-45 of the Draft RMPA/EIS provided background on the population groups identified via the Nature Conservancy in the <i>A Conservation Management Strategy for Nine Low Elevation Rare Plants in Clark County, Nevada</i> report. The sentence is accurate that the California Wash population group, within which the Project would be constructed, is one of the largest population groups; the second largest of the 17 total population groups identified. The analysis has been clarified to denote when the Hamilton and Kokos threecorner milkvetch habitat data is used versus the Nature Conservancy population group data.
B9-22	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-49; Downstream impacts may or may not be negative. Sandy soils derived from fluvial and or Aeolian sources are dynamic. Milkvetch populations may adjust to new sandy deposition areas.	The comment is noted. The analysis states that these downstream changes to the ephemeral drainages "could impact an even larger proportion of this population group" not that the impact would occur. It is unknown whether the effect would be negative, neutral, or beneficial.
B9-23	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-49; The claim that 39% of all modeled habitat on BLM land would be lost is unsubstantiated in the document.	The analysis provides a step-by-step process for how the conclusion was reached regarding the total percentage of threecorner milkvetch habitat lost on BLM lands, following construction of the Proposed Action. The BLM considers habitat located on the Project site and within 1 mile (1.6 kilometers) of the Project site to be affected either directly or indirectly by Project activities. This total area impacted by the Project was then added to the total area of habitat on BLM land currently developed to identify the total loss following developed. The analysis has been revised for clarity to analyze the existing loss of habitat on BLM land under the "Construction, and Operation and Maintenance" analysis, and maintain the cumulative loss of habitat on BLM land under the "Cumulative Effects" on page 3-53 of the Final RMPA/EIS. The cumulative analysis assumes that all energy corridors, ROW corridors, and cumulative projects would be developed. Some of the values presented in the analysis have been revised for accuracy, but the overall conclusions remain the same.
B9-24	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-49; Creating the proper sandy soil habitat would work to mitigation impacts to this species. It is a dynamic species that colonizes stabilized dune habitat.	The comment is noted. The exact manner in which downstream deposition of fine sand could occur is unknown at this time and therefore cannot be identified as definitively beneficial and as such a viable mitigation or quantifiable for offset of on-site impacts for threecorner milkvetch.
B9-25	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-50; A reference is needed to support this claim. Other sites may have greater proximity to urbanized areas and greater weed vectors.	The statement regarding the potential for weed densities to triple is based on the BLM's extensive knowledge of BLM land in the Southern Nevada District and what has occurred on other utility-scale solar sites.
B9-26	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-50; A reference is needed to support this claim. Other sites may have greater proximity to urbanized areas and greater weed vectors.	The statement regarding the potential for Project area to become a monoculture of non-native and noxious weeds is based on the BLM's extensive knowledge of BLM land in the Southern Nevada District and what has occurred on other utility-scale solar sites.
B9-27	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-50; This statement implies that the project Proponent/Applicant may not conduct control measures or that the Proponent/Applicant could skip a treatment window. The BLM provides no evidence that the Proponent/Applicant would not follow all requirements as laid out in the project plans.	The statement identified by the commenter is factually true that if control measures are not conducted, weeds would proliferate, but the statement has been moved to prior to implementation of the Integrated Weed Management Plan, PUP, and mitigation in the Final RMPA/EIS to avoid inference that the Applicant would not properly implement these control measures.

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B9-28	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-51; A reference is needed to support the claim that cacti and yucca would not occupy the site again for hundreds of years.	Natural revegetation of native plant communities is slow in the Mojave Desert. The average time for the reestablishment of perennial plant cover following a variety of disturbances in North America's Mojave and Sonoran Deserts was 76 years, and even partial recovery of species composition required over two centuries. Various cacti species have been studied to have a low abundance on disturbed sites compared to undisturbed (Abella 2010). The statement has been clarified to refer to natural reoccupation.
B9-29	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters)Sec. 3.6.2, p. 3-56; This statement is true for all project alternatives, not just the All Mowing and Hybrid Alternatives; however, the way the text is written, the document could easily imply that impacts from invasive species would be greater under the Proposed Action, which is not correct.	Disturbance is a primary factor that allows and influences the increase in density and spread of invasive species (Masters and Sheley 2001). The Proposed Action would disturb the entire Project site through disk and roll, and grading, allowing the greatest potential for occupation by invasive species on the Project site and within 1 mile (1.6 kilometers). Due to the small areas of grading required as part of the All Mowing Alternative, implementation of the Integrated Weed Management Plan, PUP, and mitigation measures are anticipated to fully address any adverse effects related to invasive species, as analyzed on pages 3-56 and 3-57 of the Draft RMPA/EIS. The Hybrid Alternative would involve disk and roll across a portion of the site, in addition to the areas of grading. Although the effects would be comparatively smaller than for the Proposed Action, adverse effects would remain after implementation of the plans and mitigation measures, as analyzed on pages 3-63 and 3-64 of the Draft RMPA/EIS.
B9-30	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Socioeconomics and Environmental Justice	Section 3.6 (Vegetation and Jurisdictional Waters), All-Mowing Alternative, Invasive Weeds, p. 3-56 and Table ES-2, p. ES-8 Socioeconomic and Environmental Justice: Employment; The marginally greater workforce needed to implement the All-Mowing Alternative would not have an appreciably greater impact on the regional economy.	The commenter is correct that compared to the overall economy, the effect would not be appreciable. The statement has been revised in the Final RMPA/EIS to indicate that the benefit on the economy from the potentially larger workforce associated with the action alternatives would be marginally greater than the Proposed Action.
B9-31	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-60; Direct observation of regrowth at ISEGS solar plant show vegetation recovery in less than 10 years, with vegetation looking very similar to vegetation outside the facility.	The commenter's observations are noted. Although natural revegetation of native plant communities is slow in the Mojave Desert (refer to Response to Comment B9-28), some species re-establish naturally more quickly than others, which can result in the appearance that full revegetation has occurred. Annual plant communities, such as forbs and shrubs, appear to recover more rapidly than perennial vegetation, such as cacti, following disturbance (Abella 2010). It is feasible that plants are naturally revegetating on the ISEGS site, but based on many other studies of natural desert revegetation, it is extremely unlikely that the site is naturally revegetated to pre-disturbance conditions. Implementation of restoration techniques have been observed to initiate ecosystem recovery and accomplish project objectives in Mojave Desert study areas (Abella and Newton, A systematic review of species performance and treatment effectiveness for revegetation in the Mojave Desert, USA 2009). This appears to be true for the ISEGS based on the 2017 Revegetation Monitoring Report for Short-term Disturbance (CH2M Hill Engineers Inc. 2018), and since areas were constructed using drive and crush that preserved the root balls and allowed for vegetation to regrow.
B9-32	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-60; Actual survey results should be the basis of analysis. GIS models are used when field data is not available and to provide a macro level analysis.	Refer to Response to Comment B9-4.

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B9-33	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-62; This language should be removed. Need to preserve option for disk and roll in Traditional Development areas; that is an essential feature of this alternative. MM VG-2 should be rewritten to accommodate this.	MM VG-2 was intended to require drive and crush, instead of disk and roll, only in areas proposed for traditional development that are within modeled threecorner milkvetch habitat according to the Hamilton and Kokos model. The purpose of the mitigation is to reduce significant and adverse impacts to threecorner milkvetch. MM VG-2 and any references have been revised in the Final RMPA/EIS for clarity accordingly.
B9-34	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-63; This language should be removed. Need to preserve option for disk and roll in Traditional Development areas; that is an essential feature of this alternative. MM VG-2 should be rewritten to accommodate this.	Refer to Response to Comment B9-33. The use of drive and crush is a required mitigation to reduce impacts to threecorner milkvetch.
B9-35	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-64; This is virtually a moot point as there are only two yuccas present on the entire site.	Refer to Response to Comment B9-7 for the discussion of the number of yucca anticipated given the line transect results.
B9-36	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Vegetation and Jurisdictional Waters	Section 3.6 (Vegetation and Jurisdictional Waters) Sec. 3.6.2, p. 3-64; MM VG-2 needs to be changed to allow disk and roll in traditional development areas.	Refer to Response to Comment B9-33. The use of drive and crush is a required mitigation to reduce impacts to threecorner milkvetch.
B9-37	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.1, p. 3-80; This statement is misleading. It is only this localized region (Muddy Mountains west to Coyote Springs Valley) where intensive, highly localized studies have been conducted. Therefore clarification is needed on this point so the document doesn't mislead the statement that it is the "highest density" area when it is really just one of the only areas that has been surveyed. Elsewhere in the NMRU, the densities rely on a broadly based assessment method that is not comparable to the localized, intense density assessment methods. That broad, NMRU regional assessment samples all qualities of habitat within the sampling strata, not just good habitat, so the NMRU-wide density will naturally be lower overall than localized habitat of sufficiently good quality into which to translocate tortoises.	The referenced statement indicates that the density of desert tortoise found on the Project site is the highest known density of the studies completed. This statement is accurate as stated. It is true that many areas have not been studied or have been studied with less rigor than the Project study area and could have higher densities, which is why the statement was qualified with "and, of the studies completed."
B9-38	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Table 3.8-1, Footnote 2 p. 3-81; While no live tortoises were found, such that the FWS protocol calculation could be applied, over 35 Class 1 and 2 tortoise burrows were found. So, Area F should be included in the geographic calculation of density.	The density of adult desert tortoise in Table 3.8-1 has been revised to incorporate development area F, with a note indicating what the density is excluding development area F. This approach is consistent with how the data is presented in the Biological Assessment, provided as an attachment to the Final RMPA/EIS.
B9-39	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-82; This statement is misleading. Whether tortoises are moved temporarily off site or moved to distant translocation site, they are all "taken" according to the Endangered Species Act. The DEIS's statement suggests that all the tortoises would be killed ("mortality take"). It is of utmost importance that the definition "take" be used in the right context since there is no intent to kill any tortoises. Other nomenclature will need to be used in this instance if the intent of the word "take" is to really "to move."	Refer to Response to Comment B9-8 regarding the definition of take. For clarity, the statement has been revised to indicate that the Proposed Action would result in the loss of the 215 adult desert tortoises and approximately 900 or more juvenile tortoises currently on-site as stated under "Residual Effects" on page 3-84 of the Final RMPA/EIS. Refer also to the Master Response 2: Mojave Desert Tortoise (under Take of Desert Tortoise) for additional information on "take" of desert tortoise under the Proposed Action.
B9-40	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-82; The Hybrid Alternative permits a percentage of tortoises to be translocated distantly to an area south of the project, even though densities are considered to be too high. The Proposed Action could also move tortoises off the site into this same area, plus other areas surrounding the development areas. Admittedly, more tortoises would be moved permanently offsite with the Proposed action. If it's acceptable to translocate any tortoises south (Hybrid Alternative), then a better approach for the discussion would be to evaluate the consequences of moving all of the Proposed action tortoises outside the site and south, rather than stating that it simply can't be done (when, in fact, that's exactly what is occurring with the Hybrid approach).	Translocation under the Proposed Action does not meet the requirements of the current USFWS Translocation Guidance, and therefore translocation of desert tortoises under the Proposed Action cannot be approved. BLM's preferred alternative, the Hybrid Alternative, which involves a different and experimental translocation approach of translocating some of the tortoises south of the site (59 adults), translocating some directly outside of the Project boundary (79 adults), and releasing some of tortoises back into the Project site (81 adults), was analyzed in the Draft RMPA/EIS. The translocation would be conducted in accordance with the Desert Tortoise Translocation Plan appended to the Final RMPA/EIS. In addition to the estimated 219 adult tortoises, there would also be an estimated 1,100

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						<p>juvenile tortoises that would have to be translocated as well. This translocation method would also be evaluated in the Section 7 consultation with the USFWS. Project area surveys found high densities of desert tortoises in the habitat within and adjacent to the Project site. Most of the tortoises being translocated south of the site (59 adults) would be tortoises from the northern part of the Project site (development areas A, B1, B, and C) because there is very limited space to translocate tortoises outside of the Project boundary in this area. Tortoises would be translocated south of the Project area in an effort to not overly inflate tortoise densities immediately around the Project perimeter.</p> <p>The approach of including a small translocation area within 1 mile (1.6 kilometers) south of the Project site relieves the extremely high density numbers that would have been created by conducting translocation for the Proposed Action, which would have involved translocating every single tortoise either outside of the Project boundary or to the area further south of the Project site. Translocating desert tortoise further south would require finding enough space south of the Project site to translocate an additional approximately 81 adult tortoises which are planned to be translocated back into the solar facility after construction is complete under the Hybrid Alternative. Without this translocation area south of the Project site, other alternatives would have to be explored that would include reducing the overall size of the Project in order to lower the tortoise densities, at which point the translocation process would no longer need the small translocation area.</p>
B9-41	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-83; This statement is not entirely accurate. A more accurate statement is: “It may take decades for the habitat to be fully native and resemble (if not replicate entirely) the original habitat. While the quality of the habitat would be less than the original during this regeneration process, it could still be function as habitat for tortoises before it achieves the final stages.”	Rootballs and seed banks are destroyed when disk and roll methods are employed. Other solar sites that have utilized these methods have not shown revegetation of native species. Refer to Response to Comment B9-31 regarding studies on revegetation of native species in the desert. The analysis conservatively maintains that it may take decades or longer, if ever, before the area becomes functioning habitat for the desert tortoise.
B9-42	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-83; The basis for the calculation of the percentage of suitable habitat is undefined. It is unclear whether only BLM land is considered to be suitable habitat or whether the calculation was meant to include all habitat, including public, private and tribal which is relevant because wildlife are not constrained by legal boundaries of land ownership.	The basis is the ROW application area, which is described as the "immediate" area in this context. The percentage identified is meant to give a general sense of size of the Project site as compared with the valley in which it lies. The more critical aspect of the analysis follows, describing the barriers to tortoise in this area from moving east to west and north to south due to the fence lines of the Project.
B9-43	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-83; Unlike more mobile animals that actually migrate or travel long distances, adult tortoises make rare long-distance movements and arguably do not migrate or may migrate only over short distances, if at all. Subadult tortoises do disperse over long distances, however. There is little habitat west of the site for young tortoises to disperse into. The Dry Lake Range does not offer suitable habitat and it is bordered on its west by the railroad and freeway. The basin to the south of the Project is also bounded by mountains to the south that may or may not be occupied. In sum, the Project is located such that there would be minimal effect on dispersal. Also, tortoises do live in the mountains. It is entirely dependent on the quality of the parent material, steepness, and elevation.	<p>The commenter is correct that adult Mojave desert tortoise do not generally migrate or disperse across long distances. Regardless of the low motility of this species, barriers fragment desert tortoise populations into smaller populations that are susceptible to genetic deterioration and local extinctions (Boarman 2002). Due to the presence of suitable habitat, desert tortoises are currently assumed to be present in varying densities in the flat and gently sloped areas to the east of I-15 in the Project area. Construction of the Proposed Action would pose a barrier that prevents gene flow between the remaining fragmented desert tortoise populations to the northeast, south, and west. Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) for additional explanation.</p> <p>Typically, desert tortoises in the Northeastern Mojave Recovery Unit live in creosote bush scrub communities of flats, valley bottoms, alluvial fans,</p>

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						and bajadas, but occasionally use other habitats such as rocky slopes and blackbrush scrub. Stating that desert tortoise live in the mountains would be misleading as generally this species prefers flat regions. Mountain ranges are considered to be barriers for desert tortoise (USFWS 2011). Due to the low probability that desert tortoises use hilly and steeply sloped areas, the discussion and analysis maintains that the North Muddy Mountains are a barrier for tortoise rather than suitable habitat.
B9-44	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-84; This statement is a misrepresentation. See comment above (#34) regarding the definition of “take.”	The statement identified by the commenter is correct. Due to the lack of available areas for off-site translocation, the Proposed Action would result in the loss of 215 adult desert tortoises and approximately 900 or more juvenile tortoises. Refer to Response to Comment B9-8 regarding the definition of take and clarifications made to the text of the Final RMPA/EIS regarding mortality take or loss under the Proposed Action.
B9-45	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Table 3.8-2, p. 3-86; See comment above for p. 3-82, Paragraph 4.	Refer to Response to Comment B9-9.
B9-46	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-88; Adult density is 7.7, not 8.4. See p. 3-80. (The 8.4 was erroneously copied from Table 3.8-1 for the Alternative Development Areas. The cumulative density of the Alternative Areas in Table 3.8-1 is not relevant to the discussions and should be removed from Table 3.8-1; it only adds confusion.)	The tortoise density for the All Mowing Alternative on page 3-85 of the Final RMPA/EIS has been revised to "(an estimated 22.8 adult tortoises per square mile [8.8 per square kilometer])." The desert tortoise density for the Hybrid Alternative on page 3-88 of the Final RMPA/EIS has been revised to "(an estimated 19.9 adult tortoises per square mile [7.7 per square kilometer])." These clarifications are also shown in Master Response 2: Mojave Desert Tortoise (under Desert Tortoise Habitat and Densities).
B9-47	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-88; See comment above for p. 3-82, Paragraph 4.	Refer to Response to Comment B9-9.
B9-48	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-89; This is not the definition of “take”.	Refer to Response to Comment B9-8 regarding the definition of take. The commenter is correct that the term "take" does not solely refer to injury or death. For clarity the statement has been revised to remove the term take, so as to avoid any confusion about the definition solely referring to injury or death when it refers to a variety of activities.
B9-49	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-89; The direction is wrong (it should be west to east to the N. Muddy Mts.).	The intent was in the east-west direction for tortoises traveling both to and away from the Muddy Mountains, as the following sentences states, "The fencing of the facility would form an approximately 6-mile-long (9.6-kilometer-long) barrier to east-west migration and an approximately 3-mile-wide (4.8-kilometer-wide) barrier to north-south migration." Edits have been made to the Final RMPA/EIS to clarify its tortoise movement versus "migration."
B9-50	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-89; More importantly, unlike more mobile animals that actually migrate or travel long distances, adult tortoises make rare long-distance movements and arguably do not migrate or may migrate only over short distances, if at all. The habitat connectivity from southwest of the project to the northeast would remain for subadults and distant translocatees to disperse into.	Refer to Response to Comment B9-43. The analysis on page 3-89 of the Draft RMPA/EIS states that the barrier the Hybrid Alternative would pose on desert tortoise movement would be smaller than the Proposed Action but would remain.
B9-51	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Section 3.8 (Threatened, Endangered, and Candidate Species) Sec. 3.8.2, p. 3-90; Again, inaccurate use of the word “take.” All tortoises moved from the site would be taken. Or consider use of other word like “move” or “moved.”	Refer to Response to Comment B9-8 regarding the definition of take. The commenter is correct that the term "take" is erroneously used in this context. For clarity, the statement has been revised to compare the level of

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						adverse effect on desert tortoise between the All Mowing Alternative and the Proposed Action.
B9-52	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Cultural Resources	Section 3.12 (Cultural Resources) Sec. 3.12.1, pp. 3-124 and 3-125; There are various references to what may or may not be multiple segments of the Old Spanish Trail/Mormon Road recorded within the direct APE. The discussion of these segments and their eligibility status is confusing and may appear contradictory to the reader. It sounds as though different segments (or "traces") of the trail were recorded during different phases of the Project: 1) during the original baseline surveys conducted by Knight and Leavitt in 2018, and 2) by an unspecified party in March 2019. The segment recorded in 2018 appears to be recommended as a non-contributing element and the segment recorded in 2019 appears to be recommended as a contributing element. Clarification would indicate whether these are, in fact, two separate segments and not one segment with two different eligibility statuses.	<p>The Old Spanish Trail/Mormon Wagon Road is listed on the NRHP. A records search identified one non-contributing segment of the Old Spanish Trail/Mormon Wagon Road within the Area of Potential Effects (APE). The non-contributing segment near the Crystal Substation to the west of I-15, was not located in the field during the Knight & Leavitt 2018 survey (Knight & Leavitt 2019). A record that was not available in the records was later provided to BLM that included a contributing segment in development area B of the Project site. This segment was initially recorded in 2010 under the ARRA project (AECOM 2012). This segment was not relocated under the Knight & Leavitt 2018 survey. On March 7, 2019, Knight & Leavitt re-located this segment and concluded that this segment has turned into a well-travelled modern two-track road with a good level of disturbance.</p> <p>The text on page 3-124 has been clarified in the Final RMPA/EIS to note that during the March 7, 2019 Knight & Leavitt resurvey, the Old Spanish Trail/Mormon Wagon Road contributing segment from the AECOM 2012 survey was relocated. The National Historic Trails Inventory Project deemed the segment a contributing segment of the Old Spanish Trail/Mormon Wagon Road recommending NRHP eligibility.</p> <p>The text on page 3-125 that referenced two non-contributing segments of the Old Spanish Trail/Mormon Wagon Road has been revised in the Final RMPA/EIS to reflect that only one segment was considered a contributing segment to the Old Spanish Trail/Mormon Wagon Road.</p>
B9-53	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Cultural Resources	Section 3.12 (Cultural Resources) Sec. 3.12.1, pp. 3-124 and 3-125; The reader would also benefit from an explanation as to why one segment within the APE was recommended as a contributing element compared to the non-contributing segment, particularly given the focus on the single contributing segment in the following environmental consequences sections.	As stated on page 3-124 of the Draft EIS, the Old Spanish Trail/Mormon Wagon Road segment in Development Area B was recommended as a contributing segment under Criterion A to the NRHP, meaning the trail segment contributes to the major pattern of American history. On March 7, 2019, Knight & Leavitt re-located this segment and concluded that this segment has turned into a well-travelled modern two-track road with a good level of disturbance. The initial recommendation as a contributing segment Old Spanish Trail/Mormon Wagon Road was found to have retained the integrity of location, setting, feeling, and association, rather than design, materials, and workmanship as the appearance and current use of the segment has deteriorated in condition and original appearance.
B9-54	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Editorial	Section 3.12 (Cultural Resources) Sec. 3.12.1, pp. 3-124 and 3-125; It would be helpful to move any discussions of trail segments recorded/updated during the 2018 and 2019 survey/site recording efforts from the Previous Research section to the Archaeological Survey section for clarity. This includes the discussion of which sites from the records search were found/ not found during the survey. As the text is currently written, it is difficult to distinguish between previous (pre-2018) and current (2018 and 2019) NRHP eligibility evaluations.	The revisions made to address Comment B9-52 clarify the segments found during the archaeological surveys.
B9-55	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Cultural Resources	Section 3.12 (Cultural Resources) Sec. 3.12.1, p. 3-125; Impacts to NRHP-eligible 26CK1212 are not discussed in the Proposed Action or Hybrid Alternative sections. Under the All Mowing Alternative section, it is mentioned that the site could be adversely affected and that direct and indirect effects on this resource would be reduced as a result of mitigation. This site should also be discussed in the Proposed Action or Hybrid Alternative sections.	The Proposed Action and the Hybrid Alternative would not involve construction in development area B2, where the NRHP-eligible resource (26CK1212) is located. Due to avoidance of the entire area, direct and indirect effects on this resource would not occur under the Proposed Action or Hybrid Alternative. The All Mowing Alternative would involve construction within development area B2, resulting in direct and indirect effects on this resource, as analyzed on page 3-130 of the Draft RMPA/EIS.

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B9-56	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Cultural Resources	Section 3.12 (Cultural Resources) Sec. 3.12.1, p. 3-125; In addition, the site number is incorrect in line three under "All Mowing Alternative."	The site number for the NRHP-eligible resources in development area B2 has been corrected to 26CK1212.
B9-57	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Cultural Resources	Section 3.12 (Cultural Resources) Sec. 3.12.2, p. 3-131; This passage from the All Mowing Alternative stands out as a somewhat leading statement. It is hard to state definitively that the trail would be completely "restored" under the All Mowing Alternative, especially considering the trail has already been altered from its original state and currently functions as a two-track road. The phrasing "for posterity" has a certain weighted connotation.	<p>The contributing segment has been "altered from its original state and currently serves as a two-tracked road" as noted by the commenter. However, this segment of the Old Spanish Trail/Mormon Wagon Road is eligible to the NRHP under Criterion A and holds integrity of location, setting, feeling, and association.</p> <p>The analysis is accurately intimating that because the All Mowing Alternative is maintaining vegetation across the majority of the Project site, notably development area B (aside from some small areas of grading), once the solar infrastructure is removed following decommissioning, restoration would restore the integrity of location, setting, feeling, and association of the segment. The term "for posterity" has been removed in the Final RMPA/EIS as it does connote a duration beyond control.</p>
B9-58	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Old Spanish National Historic Trail	Section 3.12 (Cultural Resources) Sec. 3.12.1, p. 3-124; 5,843-foot length of the “California Crossing” of the Old Spanish Trail is described as contributing for the proposed (2010) NRHP listing for the OST. However, this segment was not identified in the Class III surveys conducted by Knight & Leavitt, and was determined in field surveys to have been converted into a “well-used, modern, two-track road.” Nonetheless, this feature is described as still retaining the integrity of location, setting, feeling, and association. Given the degree of impact and change to this feature, it should no longer be concluded that this feature is a contributing segment to the OST’s NRHP eligibility.	Refer to Response to Comment B9-53 and Master Response 5: Old Spanish National Historic Trail . The SHPO will make the final determination on eligibility.
B9-59	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Old Spanish National Historic Trail	Section 3.12 (Cultural Resources) and Section 3.14 (Old Spanish National Historic Trail); In both these sections of the EIS, it should be noted that NEPA requires the disclosure of impacts, and the identification of mitigation measures. Impacts that remain significant after mitigation do not necessarily make a project impossible to implement—it is essential for BLM to consider the varied and sometimes conflicting regulations affecting the site.	The purpose of NEPA is to ensure informed and transparent environmental decision-making. NEPA does not create a general substantive duty on Federal agencies to mitigate or eliminate adverse environmental effects. The EIS process ensures that agencies will take a "hard look" at environmental consequences and by guaranteeing broad public dissemination of relevant information. NEPA itself does not impose substantive duties mandating particular results, but simply prescribes the necessary process for preventing uninformed agency action (<i>Robertson v. Methow Valley Citizens Council</i> . 490 U.S. 332, 352 (1989)). Several adverse effects remain after implementation of mitigation or plans, not just to the OSNHT, as analyzed in the RMPA/EIS. The finding of these adverse effects during the NEPA process does not necessarily preclude implementation of a project.
B9-60	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Old Spanish National Historic Trail	Section 3.12 (Cultural Resources) and Section 3.14 (Old Spanish National Historic Trail); Appropriate mitigation measures that may be considered to further reduce impacts can include photo or video documentation of the trail and related features, virtual reality documentation of the existing conditions, and recordation and documentation of cultural resources.	In accordance with the commenter's suggestion, a new mitigation measure, MM National Historic Trail (NHT)-2 has been presented and added to the Final RMPA/EIS. Refer to Master Response 5: Old Spanish National Historic Trail for more information on the mitigation to address impacts to the OSNHT, and Appendix H for the full text of MM NHT-2. The mitigation does not change the substantial interference conclusion identified in the Draft RMPA/EIS. The mowing alternatives allow for some reduction of impacts to elements of the OSNHT's character and the restoration of the OSNHT in 30 years, but do not avoid or minimize the effects during construction and operation of the solar facility.
B9-61	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Old Spanish National Historic Trail	The following information, provided by the Nevada Chapter of the OSTA, should be added to provide additional background on the extensive developments that have modified the setting and other aspects of the OST’s integrity: “Since the Old Spanish Trail was founded in 1829, crossing New Mexico, Colorado, Utah, Arizona, Nevada and California, major projects have been built along the Trail now proposed for	The information is noted for the record. Due to the level of impacts to the Old Spanish Trail in this region, the 2017 Administrative Strategy identified this area for it is preservation of character and setting. While this

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					the Gemini Solar Project, leaving few Traces along the Trail:1. The Salt Lake to California Road operated between 1848 and the early 1900s with over 300,000 emigrants utilizing the Road, topping the OST, along with thousands of head of livestock.2. The Union Pacific Railroad built between Salt Lake City and Los Angeles in the early 1900s impacts the Trail over the ensuing years.3. The Arrow Head Trail was the first “all weather” road between Salt Lake City, UT and Los Angeles, CA, built in 1915-16, impacting the Old Spanish Trail in the precise location of the subject ‘Gemini Solar Project’ proposal. The Arrow Head Trail was maintained through 1924.4. In 1925 U.S. Highway 91 replaced the Arrow Head Trail Highway between Salt Lake City and California, with the construction of significantly impacted the Old Spanish Trail between Glendale (Moapa River Indian Reservation) and the Las Vegas Valley.5. In the 1940s, the Las Vegas Bombing and Gunnery Range, now known as Nellis Air Force Base, was built along the Old Spanish Trail Corridor, further impacting the Trail.6. Beginning in the 1950s, the Apex Industrial Site began to take shape along both the Old Spanish Trail and the Salt Lake to Los Angeles Road making locating any portion of the Old Spanish Trail and Salt Lake to Los Angeles Road more difficult.7. Beginning in the 1960s and early 1970s, U.S. Interstate Highway I-15 was constructed along the same corridor as the Old Spanish Trail and Salt Lake to Los Angeles Road, further impacting the Trail.8. Since the 1980s until the present time, there has been built many Power Generating Plants, Major Solar Farms, Transmission Lines, etc., along this portion of the Old Spanish Trail.9. In the 1990s, the entire Garbage Collection Complex for Southern Nevada for Republic Services was moved from the southeast bench of the Las Vegas Valley to the Apex Industrial Site, further impacting the Old Spanish Trail Corridor.10. In 2019, the Gemini Solar Project, along with several large Solar Arrays and transmission lines, have followed the Old Spanish Trail Corridor along I-15.”	is interesting and accurate information, it would not change the analysis presented in the Draft RMPA/EIS.
B9-62	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Old Spanish National Historic Trail	It is further noted that the Nevada Chapter of OSTA has stated support for the project, subject to implementation of mitigation measure NHT-1.	The comment is noted. As stated on page 3-141 of the Draft RMPA/EIS, MM NHT-1 is a voluntary compensatory mitigation identified in coordination and consultation with the OSTA.
B9-63	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Old Spanish National Historic Trail	Section 3.14 (Old Spanish National Historic Trail); This section of the EIS should explain that temporary impacts are allowable, provided a restoration plan is provided, under the National Trails System Act, as described under BLM Manual 6280. The project as proposed is a temporary impact only, and a restoration plan will be required to be implemented prior to the start of construction to ensure decommissioning and restoration occurs in compliance with applicable regulations and the terms of the Record of Decision.	<p>The comment is noted and may be correct. "The Secretary of the Interior ... may grant easements and rights-of-way upon, over, under, across, or along any component of the national trails system in accordance with the laws applicable to the national park systems and the national forest system, respectively" (NTSA Section 9(a)). "The purpose of these easements is to convey certain limited rights to use property for a specific purpose such as a pipeline, cable, or road. The agreements should err on the side of resource and viewshed protection, and, if possible, include time limits and full site restoration after the right-of-way or permitted use ceases" (Reference Manual 45, National Trails System, NPS 2019).</p> <p>The Project site would be restored in accordance with the Decommissioning and Site Reclamation Plan, which would align with the NPS Reference Manual regarding ROW grants for projects within a trail identified by the national trail system. The analysis of the Proposed Action and action alternatives in Section 3.14: Old Spanish National Historic Trail in the Draft RMPA/EIS, identified any residual effects on the OSNHT corridor and contributing segment of the Old Spanish Trail following restoration. Due to the level of disturbance proposed under the Proposed Action, restoration to pre-disturbance conditions is not expected and permanent effects on the localized elements of the OSNHT corridor setting would remain adverse. Adverse impacts would not be temporary under the Proposed Action. Due to maintenance of vegetation on the Project site as part of the All Mowing Alternative, following restoration, the setting, feel, and association of the OSNHT corridor and contributing segment of the Old Spanish Trail could be restored and adverse effects minimized. No further clarification is required in the analysis as it is consistent with the commenter's observation.</p>

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B9-64	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Project Description	Appendix D Figures, Figure 2-1; Development Area F should be shown, since all other Development Areas are shown.	Development area F was considered during the alternatives screening analysis and rejected from further consideration due to the presence of a large population of and high-quality habitat for the state-endangered threecorner milkvetch (refer to the Alternatives Report). Reference to development area F is only appropriate in the context of the biological studies conducted, as development area F was within the Study Area for the botanical and desert tortoise studies. Refer to Master Response 1: Alternatives for further information on development area F.
B9-65	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Project Description	Appendix D Figures, Figure 2-2; Development Area F should be shown, since all other Development Areas are shown.	Refer to Response to Comment B9-64.
B9-66	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Project Description	Appendix D Figures; Is this a “typical” road (i.e., 50 feet wide and also bordered by the perimeter fence)? Are all the roads for the project like this? Where in (or outside) the project would this kind of road be located? In other words, a better diagram of the different kinds of roads is warranted.	Access road widths and composition of substrate would vary depending on location, as well as between the Proposed Action and action alternatives. Figure 2-12 currently shows what a typical internal access road proposed within traditional development areas would look like. To avoid confusion, Figure 2-12 has been replaced with a figure to more accurately show the range of roadway types proposed. Refer to Chapter 2: Proposed Action and Alternatives for descriptions of the various roadways proposed.
B9-67	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Geology, Soils, and Mineral Resources	Appendix H Mitigation, Monitoring, Reporting Measures; First bullet point: Remove the term “offsite washes.” Clark County will have jurisdiction oversight of the Drainage Study and they require the downstream impacts be mitigated prior to leaving the site. If improvements to washes are required, they must be “onsite.”	It is acknowledged that the Clark County RFCD would review and have jurisdiction to approve the Drainage Study (Table 1.6-1 of the Draft RMPA/EIS). In accordance with the Hydrologic Criteria and Drainage Design Manual, the flow and rate of flow downstream shall not increase from upstream uses, within reason, unless existing drainage systems are capable of handling the increase (Sections 303.1.1 and 303.1.2). The policy of Clark County is to require new developments to construct private on-site flood control facilities. Erosion associated with changes or increases in flow must be managed on-site. The intent was for any washes within the Project area but not within the fence lines. MM GS-1 has been revised to clarify the installation of erosion control and bank stabilization devices on Project area washes.
B9-68	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Geology, Soils, and Mineral Resources	Appendix H Mitigation, Monitoring, Reporting Measures; Second bullet point: Clarify what the routine site inspections consist of and what frequency the BLM wants to see it. The BLM should distinguish between the permanent erosion control measures of the project during the life cycle and what the temporary measures are during construction. If the project requires a General Stormwater Permit through the Nevada Division of Environmental Protection then BMPs and erosion control measures will be required as part of that permit.	As analyzed in Section 3.3: Geology, Soils, and Mineral Resources, erosion impacts that occur during construction would be addressed with adherence to the Construction Stormwater General Permit NVR100000, which requires preparation of a SWPPP identifying and requiring installation of site-specific erosion control BMPs. MM GS-1 is intended to address erosion impacts during operation and maintenance of the Project.
B9-69	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Water Resources	Appendix H Mitigation, Monitoring, Reporting Measures; Need to clarify review authority. Historically, Clark County acted as the review authority for the drainage study, civil improvement plans and grading permits on BLM sites.	It is acknowledged that the Clark County RFCD would review and have jurisdiction to approve the Drainage Study and issue the Grading Permit and Building Permit (Table 1.6-1 of the Draft RMPA/EIS). MM WR-1 has been revised to reflect the jurisdiction Clark County would have over the final engineering drawings. The BLM would still need to be notified to understand the proposed actions and ensure that they are within the allowed activities per the lease stipulations.
B9-70	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Threatened, Endangered, and Candidate Species	Appendix H Mitigation, Monitoring, Reporting Measures; Discussion addresses measures during construction, but not during general maintenance on the site, during operations. The latter will necessarily be different due to the presence of tortoises on the site and the need for moving them out of harm’s way without a project biologist.	The impact analysis in Section 3.8: Threatened, Endangered, and Candidate Species finds that adverse effects on desert tortoise could occur during O&M of the Proposed Action and action alternatives as well as construction. MM WILD-5 is required to be implemented not only to construction activities, but O&M as well. The compliance schedule in Appendix H has been revised to reflect this. Desert tortoise that cannot be

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						<p>avoided during O&M can only be moved by an Authorized Biologist, if necessary. Non-authorized personnel, such as facility staff, are not permitted to move desert tortoise.</p> <p>A Project-specific Biological Opinion will be issued that includes non-discretionary, reasonable, and prudent measures, terms, and conditions to further minimize tortoise take and elucidate some of the requirements of MM WILD-5. The Biological Opinion is anticipated to be complete in November.</p>
B9-71	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Air Quality and Climate Change	Appendix H Mitigation, Monitoring, Reporting Measures; Remove paving as an option. Paved black surfaces would have significant visual impacts and other surface stabilization methods that create lower levels of visual contrast can be equally effective.	MM AQ-1 requires the consideration of paving the main access road to the main maintenance building. MM AQ-1 does not require the main access road to be paved. The final engineering design for the Project will take into consideration this option in addition to the other mitigation and regulatory requirements, including the mitigation to address visual impacts. MM AQ-1 has been revised to eliminate consideration of paving the access road to the main power block as there are many array blocks throughout the Project site.
B9-72	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Air Quality and Climate Change	Appendix H Mitigation, Monitoring, Reporting Measures; Remove the requirement to install wind fences. There will be a perimeter security fence around the project that should suffice, and stabilization will occur on the undisturbed areas.	The perimeter security fence would not act as a wind fence. Wind fences are typically comprised of material to reduce wind speeds and consequently movement of windblown dust. The requirement to install wind fences in MM AQ-1 has been clarified to specify the use around disturbed areas is only required if other dust control measures are not in place.
B9-73	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Air Quality and Climate Change	Appendix H Mitigation, Monitoring, Reporting Measures; Remove the wording “Encourage the use of newer and cleaner equipment that meets more stringent emission controls.” This statement is redundant with the Tier 3 and 4 requirements earlier in this section and is open to vague interpretation.	The intent of the language regarding use of newer and cleaner equipment was to address currently unknown developments in engine emission control technology. To clarify this intent the specified language has been removed from MM AQ-1 and the requirement to use equipment outfitted with Tier 3 or Tier 4 engines has been revised to state that equipment used must meet or exceed these requirements.
B9-74	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Visual Resources	Appendix H Mitigation, Monitoring, Reporting Measures; First bullet point: Varying the grid layout results in an inefficient mechanical and electrical layout and will result in a larger footprint than needed. This may cause safety and emergency response concerns, as unnecessary curves in roads will require emergency vehicles to slow down unnecessarily, and this needs to be discussed as a safety concern with Fire and Emergency response experts. Variation in arrays is almost impossible, as rows need to align to avoid shading from row to row, or huge additional offsets need to be included. Adding variations and also performing as required with NV Energy will not be feasible, and even if they were added, would not likely change the visual contrast. Would visual renderings help demonstrate? It would be valuable to discuss the goals with visual authority at the BLM, and determine how best to address concerns. Provide further clarification of the intent is to avoid a large overall “rectangular” layout since the project would easily avoid such a configuration given the nature and irregular shapes of the planning areas (A, B, C, D and E).	MM VR-1 has been revised to eliminate the requirement for varying the internal grid layout of array blocks and access roads within the Project site, due to the identified concerns regarding efficiency, safety, and emergency response. MM VR-1 has been revised to require the boundaries of the development areas and other linear features (e.g. gen-tie lines) to follow the natural contours and avoid linear edges, to the greatest extent feasible.
B9-75	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Visual Resources	Appendix H Mitigation, Monitoring, Reporting Measures; Third bullet point: Need to leave in flexibility in the gen-tie alignment for design considerations and constraints. What is the ultimate intent here?	The intent of the gen-tie line positioning requirement in MM VR-1 is to minimize the length that the gen-tie line is directly parallel to I-15, which would minimize the effect on viewers traveling on I-15 from the high visual contrast caused by the Project gen-tie lines (analysis on page 3-112 of the Draft RMPA/EIS). MM VR-1 has been revised to provide more flexibility in how this objective is met.
B9-76	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Visual Resources	Appendix H Mitigation, Monitoring, Reporting Measures; First bullet point: The application of colors to the rear surfaces of collectors or to frames is not viable. This is not feasible, as it would not be possible to	MM VR-2 has been revised to exclusively require the buildings at the O&M area and the water tanks to be painted in accordance with BLM's Standard Environmental Colors chart. Language has been incorporated into

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					require manufacturers to create project specific modules and has not been implemented in other solar plants.	MM VR-1 requiring that where options are provided by the manufacturer for other equipment and facilities, the least reflective and contrasting color or patina must be used.
B9-77	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Visual Resources	Appendix H Mitigation, Monitoring, Reporting Measures; In addition, if bifacial panels are used, the rear of the panels will utilize the same material as the front of the panels. (Bifacial panels have the important benefit of making the facility more efficient, thereby reducing the required footprint to generate the same amount of electricity.) Panels cannot be painted after manufacture, and cannot be ordered in specific colors. Power Conversion Structures and other electrical equipment are covered by warranty and painting these structures would affect their operations (e.g., through changes in the amount of heat absorbed) and void the warranties. The only structures that can safely and practically be covered by color requirements are the O&M building and water tanks – painting anything else will result in severe energy generation and warranty impacts which would render the project unfinanceable.	Refer to Response to Comment B9-76.
B9-78	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Visual Resources	Appendix H Mitigation, Monitoring, Reporting Measures; First bullet point: The term “public vantages” is vague. BLM should define locations for clarity.	The requirements of MM VR-2, as revised in Response to Comment B9-76, apply throughout the Project site. The language indicating the color requirements only apply to certain areas, dependent upon visibility, has been removed.
B9-79	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Visual Resources	Appendix H Mitigation, Monitoring, Reporting Measures; Second bullet point: Applying rock stains on traveled roadways, gravel accesses and other disturbed areas is not feasible. Natural materials are sufficient to match natural colors. Materials would be locally sourced and would therefore have naturally occurring colors that are similar to those onsite.	The requirement to apply rock stains in MM VR-2 has been expanded to allow use of locally sourced rocks and gravel, with the intent of ensuring the materials do not contrast with the surrounding rocks and natural materials.
B9-80	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Visual Resources	Appendix H Mitigation, Monitoring, Reporting Measures; Fourth bullet point: The addition of any coatings to equipment can only occur if there is no conflict with manufacturer’s directions for installation and maintenance, and without violating any warranty restrictions.	MM VR-2 has been clarified that all visual mitigation requirements, as they apply to substation equipment and facilities, can only be implemented granted they do not conflict with the warranty or manufacturer's guidance.
B9-81	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Visual Resources	Appendix H Mitigation, Monitoring, Reporting Measures; Fifth bullet point: Clarify that this is for above ground electrical equipment cabinets/shelters and O&M building only.	Maintenance and repainting of color-treated surfaces, as required by MM VR-2, has been clarified to refer to only those facilities that can be repainted without voiding a warranty.
B9-82	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Visual Resources	Appendix H Mitigation, Monitoring, Reporting Measures; Allow alternative light sources (e.g., LED) in lieu of low-pressure sodium lighting where the goal of reducing light pollution can still be achieved.	MM VR-3 has been revised to allow additional light sources that are known to contribute less to light pollution. Several options of the type of lighting that could be used are provided.
B9-83	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Cultural Resources	Appendix H Mitigation, Monitoring, Reporting Measures; This mitigation measure should be revised to exclude the 5,843-foot modern two-track road which was previously part of the “California Crossing” of the OST. This two-track has been so substantially modified from its original condition that it serves no purpose to establish a buffer around it. A buffer will not preserve the feature’s integrity of setting, and would only make the facility less efficient, requiring a larger footprint to achieve the same energy generation. Mitigation for this feature would continue to be provided in MM CR-2 through Data Recovery and Preservation.	MM CR-1 does not apply to the NRHP-eligible contributing segment in development area B. MM CR-2 requires the CRMMP to include procedures for preservation of this segment. The MOA and HPTP under preparation may or may not require a buffer of undetermined size around the segment. Refer to Response to Comment B9-53 and Master Response 5: Old Spanish National Historic Trail for a description of why the Old Spanish Trail/Mormon Wagon Road segment in development area B is recommended as a contributing segment and Refer to Response to Comment B9-60 and Master Response 5: Old Spanish National Historic Trail for the additional mitigation proposed for the OSNHT.
B9-84	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Cultural Resources	Appendix H Mitigation, Monitoring, Reporting Measures; Mitigation for potential impacts to the OST, in lieu of preserving a setback along the modern 5,843-foot two-track road, may include the following measures, which have been adopted by the Nevada OSTA Chapter as their “Priority Projects” for the 2019-25 planning timeframe: • The identification of Native American Rock Art Sites in Southern Nevada to determine if they contain any associated OST Rock Art, to photograph the OST Rock Art, log and GPS the sites locations and to develop a site map that will be available to OSTA Members, thus keeping the locations confidential to OSTA Members and close out-door associates.	Refer to Master Response 5: Old Spanish National Historic Trail for a discussion of mitigation. The mitigation identified in the Draft RMPA/EIS to address impacts on the segment do not necessitate a setback. MM NHT-2 in Appendix H has been updated with this information. The SHPO and BLM will determine the treatment of the segment if eligible for listing in the NRHP, through the MOA and HPTP during the Section 106 process.

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					<ul style="list-style-type: none"> • The NV Chapter has been conducting the replacement of the initial OST Markers that were placed by Nevada Historical Enthusiasts of the OST as part of Nevada’s Centennial Celebration in 1964. Many of the initial 31 Markers that followed the OST across Southern Nevada begin in Bunkerville/ Mesquite following the Virgin River to the Mormon Mesa at Half-Way Wash, over the Mesa to the Muddy River at Glendale, NV, crossing the Muddy River at the confluence of the California Wash and the Muddy River, proceeding southwest across the waterless desert of 50 miles to the Las Vegas Meadow and Springs, southwest across the Las Vegas Valley to the Cottonwood Springs (Blue Diamond), up Cottonwood Wash to the Mountain Springs Summit and Spring, diagonal across the Pahrump Valley to Stump Springs and on to Emigrant Pass, Resting Springs and on across the Mojave Desert to Los Angeles. • The NV Chapter began the Re-Marking the OST Project in 2010, replicating the original historic Centennial Markers of 1964 by casting 36 new replacement Markers and arranging and conducting a series of Eagle Scout Projects designed to replace all of the damaged, stolen or run-over Markers across the Southern Nevada portion of the Trail. In addition, each Marker across Nevada. will be numbered, photographed and mapped by GPS. • Re-printing the publication, “The Old Spanish Trail Across the Mojave Desert,” by Col. Hal Steiner, with the goal of placing a copy in each school library in Southern Nevada, as well as offering the book through outlets at the Old Mormon Fort in Las Vegas, the Las Vegas Preserve, and the BLM Book Store at the Red Rock National Recreation Area, and others. • As part of the Re-Marking the OST Project through Southern Nevada, the Chapter has begun drafting and photographing Eagle Scout Projects along the OST. It is the goal of the Chapter to finalize the draft & publish it as a Project History of the OST through Nevada in association with Eagle Scouts Projects that made the replacement of OST Markers along the Trail possible and to place a copy of this publication in school libraries in the Clark County School District. • The Chapter has set as one of its major goals to create a detailed Map that shows the OST through the Las Vegas Metropolitan Area, the most ideal locations of BLM/NPS OST Road Signage at specific locations along the route. The Chapter had determined that it will require the engagement of a Professional Urban Planner that will provide the professional assistance to create and print. The distribution of the OST Urban Map will be placed in the public, school and private libraries. • Research, identify, and produce a Social Media Site for the NV Chapter that will convey up-to-date information, activities and histories/photographs of the Old Spanish Trail 	
B9-85	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Transportation	Appendix H Mitigation, Monitoring, Reporting Measures; Regarding the carpool program language (8th bullet point), this is very hard to comply with as workers tend to not use designated carpool points. It would be better to include language that states that the “Applicant shall incentivize the contractors and subcontractors to implement and encourage carpool and vanpool programs during the construction of the project.”	MM TRA-1 has been expanded to include the option to incentivize the contractors and subcontractors to implement and encourage carpool and vanpool programs throughout construction.
B9-86	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Transportation	Appendix H Mitigation, Monitoring, Reporting Measures; Valley of Fire Road is maintained by Clark County Public Works but not built to current Clark County Standards. BLM should add clarifying language that any roadway repair work would match the current roadway design including thickness of pavement and underlying aggregate base.	Further clarification has been added to MM TRA-2 prohibiting any roadway owner to require the Applicant to repair the roadway to meet current standards for roadway construction on roadways that were not constructed according to current standards and to obtain the appropriate permits.
B9-87	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Public Health and Safety	Appendix H Mitigation, Monitoring, Reporting Measures; The requirement to store batteries at a reduced state of charge is feasible, but we will need leeway to ensure we do not void any warranties, and the term, “reduced state of charge,” may need further clarification. Batteries typically ship in the 20-50% charge range, and cannot be shipped at 0%, as this would increase degradation substantially. A State of Charge (SOC) will need to maintained after shipment to site, if there are delays in construction, and we will want to keep them above a 10% state of charge.	MM PS-3 requires batteries to be stored at a reduced state-of-charge. No requirement for storing batteries at a 0 percent charge is stated. MM PS-3 has been expanded in the Final RMPA/EIS to clarify that the specific level of charge that batteries should be stored at for safety may be determined through consultation with the battery manufacturer or other specialist. The Applicant will handle batteries per manufacturer requirements to avoid voiding battery warranty. Batteries are typically shipped in protective sleeves and are not a hazard if handled per manufacturer instructions and by qualified personnel.

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B9-88	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Project Description	Biological Assessment Project Description to be included in the revised POD.; Using compressed air to clean panels would not work, and would cause damage to the modules. Would other washing methods be considered that use limited or no water, but do not use compressed air?	<p>Concerns with using water include sourcing and transporting the water and run-off of sediment-laden excess water from the panel surfaces. Other methods of panel cleaning may be used, but they must not include trucking in water or result in water run-off from the panels. Additional flexibility has been added to the Final RMPA/EIS and the POD.</p> <p>The BA was not released for public review with the Draft RMPA/EIS; therefore, no BA comments will be addressed during the public comment period.</p>
B9-89	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Project Description	Biological Assessment; No use of berms, channels or detention basins in mowed areas will need to be confirmed during the civil permitting process in final design. May not be allowed by Clark County drainage review.	<p>Preliminary hydrologic modeling indicated that due to the maintenance of vegetation as part of the Hybrid Alternative, flows would increase in the West Tributary and California Wash compared to existing conditions, but would be less than the flows that would occur from the Proposed Action, without construction of drainage control facilities. Flows in the California Wash/ East Tributary would be lower than existing conditions for the Hybrid Alternative. Refer to Table 3.5-3 in the Draft RMPA/EIS for the results of the hydrologic modeling. The increase in downstream flows is generally considered negligible considering the magnitude of potential for flooding in the Project area and is not expected to cause an adverse effect on downstream property (Louis Berger 2019). It is acknowledged that the Clark County RFCD would review and have jurisdiction to approve the Drainage Study (Table 1.6-1 of the Draft RMPA/EIS).</p> <p>The BA was not released for public review with the Draft RMPA/EIS; therefore, no BA comments will be addressed during the public comment period.</p>
B9-90	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Project Description	Biological Assessment; Note that water tanks may be used in lieu of ponds.	<p>The language in the POD and Final RMPA/EIS has been revised to allow for the use of temporary water storage tanks or water storage ponds.</p> <p>The BA was not released for public review with the Draft RMPA/EIS; therefore, no BA comments will be addressed during the public comment period.</p>
B9-91	9/5/2019	Graf, Ricardo	Solar Partners, LLC	Project Description	General Project Information; Staging within roads in mowing areas is not feasible. Need some leeway to stage within graded portions of the mowing area that is not within roadways, as that is not a practical place to stage, and would cause safety concerns by blocking vehicular access.	The language in the POD and Final RMPA/EIS has been revised to allow for the use of a 5-acre (2-hectare) area adjacent to the O&M area for staging and is consistent with what has been included in the Biological Assessment, included as an appendix to the Final RMPA/EIS.
B10-1	8/16/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	The Council strongly encourages the BLM to adopt the No Action Alternative for the following reasons: (1) The purpose of protocol tortoise surveys is to determine distribution and densities of tortoises, then use that information to design projects that minimize or avoid as many impacts as possible, and sometimes to abandon the project based on the findings (e.g., abandonment of the proposed Calico Solar Project in San Bernardino County several years ago, in part, because of tortoise densities). Based on protocol surveys performed for the proposed Gemini Solar Project (Phoenix Biological Consulting 2018a, 2018b), the DEIS (page 3-82) estimates that 215 adult tortoises and more than 900 juvenile tortoises may be displaced from the 7,100± acres, which the Council finds objectionable. To put this in perspective, in 2017 the U.S. Marine Corps translocated 1,100 tortoises from approximately 45,000 acres (MCAGCC 2017). That the same number of tortoises would be displaced by the Gemini project from a fraction of the area (6.2%) is unacceptable.	<p>The commenter's preference for the No Action Alternative is noted. The findings of the surveys as noted by the commenter are accurate. The impacts of the Proposed Action were determined to be significant and adverse due to the loss of 215 adult tortoises and approximately 900 or more juveniles since a location for long-distance translocation was not identified. The alternatives were devised to reduce the effects to desert tortoise by allowing them to reoccupy the solar facility and remain in their home range.</p> <p>The Draft RMPA/EIS recognized the potential for impacts to desert tortoise, even in mowed areas. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for additional information on the mowing alternatives and the long-term monitoring that will be employed.</p>

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B10-2	8/17/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	(2) In order to comply with Section 7 of the Federal Endangered Species Act (FESA), BLM is required to minimize project effects and not approve actions that would compromise recovery of the species. If the No Action Alternative is not adopted, BLM must require the proponent to locate the project only where tortoise abundance is low and in areas that will retain regional connectivity. Large-scale habitat loss in a conservation area (connectivity corridor; see point 5 below) should not be authorized. U.S. Fish and Wildlife Service (USFWS) and BLM both know these areas require protection to achieve recovery	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM has reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS. Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.
B10-3	8/18/2019	LaRue, Edward	Desert Tortoise Council	Alternatives	(3) The proponent has failed to select a site where habitats are largely degraded and unsuitable for tortoises. We believe the proponent has failed to consider a range of alternative sites either lacking tortoises or supporting few individuals.	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered. The alternatives and the alternatives development process were compliant with NEPA. Areas of lower tortoise density within the ROW application area were considered during the alternatives analysis. Development area F showed very low densities but had very high occurrences of the state endangered threecorner milkvetch. Master Response 1: Alternatives explains the reasons why development area F was excluded from the alternatives. The alternatives were developed to balance impacts to these resources.
B10-4	8/19/2019	LaRue, Edward	Desert Tortoise Council	Alternatives	The proponent does not justify or demonstrate the need to provide 690 megawatts of alternating current in the first place, then claims that brownfields are too small and private lands too expensive. We believe, rather, that the proponent should have analyzed an alternative that reduces the energy output so that brownfields and/or private lands could have been economically feasible. This is typical case where the site was preselected without the benefit of environmental analysis being a part of the site selection process. Although the studies reveal significant impacts, the proponent is not willing to alter the size and location of the development footprint to minimize impacts.	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered and how the process was compliant with NEPA. A PPA has been signed for the Project with NV Energy, who would have determined the power was needed during the PPA process. While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
B10-5	8/20/2019	LaRue, Edward	Desert Tortoise Council	Alternatives	(4) The proponent has not analyzed a range of alternatives that include variable site locations even within the 44,000-acre ROW application area. Rather, the same acreage (i.e., 7,097 acres) would be impacted by different approaches with varying levels of impacts (i.e., mowing versus grubbing).	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered, including other areas of the 44,000-acre (17,806-hectare) application area and off-site options. The CEQ and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives nor do they require a reduced size alternative. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility.

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B10-6	8/21/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	The proponent identifies a 44,000-acre study area, surveyed 7,481 acres in 2017 (Phoenix Biological Consulting 2018a) and 3,722 acres in 2018 (Phoenix Biological Consulting 2018b), with no apparent overlap, so only 11,200 of the 44,000 acres have been surveyed. The Proponent has subsequently chosen to develop a 7,100-acre± portion of that area with no regard for tortoise densities revealed by their funded studies. Importantly, there are approximately 32,800 acres of lands to the east and south of the 11,200 acres surveyed in 2017 and 2018 that may support significantly fewer tortoises than the chosen impact area. We find it telling that none of the 3,722 acres surveyed in 2018 were selected for project development, even though one of those areas, the 1,832-acre Area F, had only one tortoise. It's as if the 2018 surveys were a formality as only the 2017 survey areas have been identified for project development.	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered, including other areas of the 44,000 acres (17,806 hectares) application area and off-site options. Page 4-1 under Section 4.2.1 of the Alternatives Report, incorporated into the Draft RMPA/EIS by reference, provides more information. Further information is also available for the reasons why development area F was excluded from the alternatives. The alternatives were developed to balance impacts to several resources including both desert tortoise and threecorner milkvetch.
B10-7	8/22/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	One can see in Table 5 of Phoenix Biological Consulting (2018b) that only one tortoise was found on 1,832 acres comprising Area F, which is the easternmost of the eight areas surveyed to date (Exhibits 2 and 5 <i>ibid</i>). Similarly, only one tortoise was found on 402 acres comprising Area E surveyed in 2017 (Phoenix Biological Consulting 2018a). The pertinent conclusion is stated on page 3-80 of the DEIS: "The lowest-density desert tortoise areas were found in development area F —where no tortoises with a larger than 180 millimeter (mm) mean carapace length (MCL) were identified, likely due to the presence of sandy soils— followed by E and D, which is generally the east side of the Project site." Since these are the two easternmost polygons surveyed and have the lowest numbers of tortoises (i.e., 2 tortoises on 2,234 acres), if the proponent truly wanted to select habitats supporting fewer tortoises and thereby minimize impacts (as alluded to on page 1-2 of the DEIS), it should have surveyed additional areas to the east and south of these lower-density tortoise areas within the 44,000-acre study area (see map on next page; only cross-hatched areas, corresponding to 2017 survey areas, would be developed among all alternatives). Nor would they have excluded Area F, with only one tortoise, from the Proposed Action (and all other alternatives, since the size of the proposed solar field is the same among all alternatives). Based on this information and the absence of sufficient data, we strongly recommend that if the BLM does not adopt the No Action Alternative, that they require the proponent to survey as much area as possible east of Route 169 (also "Bitter Springs Road" in Figure 6-1 of the Plan of Development) to see if lower densities of tortoises occur there. Otherwise, the proponent has not used the results of the 2017 and 2018 surveys to avoid sensitive resources, including tortoise concentrations, which is stated as a goal of the proposed development at the top of page 1-2 of the DEIS.	Refer to Master Response 1: Alternatives for the reasons why development area F was excluded from the alternatives. The alternatives were developed to balance impacts to desert tortoise and threecorner milkvetch. Page 4-1, under Section 4.2.1 of the Alternatives Report, incorporated into the Draft RMPA/EIS by reference, provides more information on areas considered but ruled out, including areas on the eastern edge of the lease. The eastern areas are closer to the BSBCB, are visible from the Muddy Mountains, and overlap OHV race areas.
B10-8	8/23/2019	LaRue, Edward	Desert Tortoise Council	Alternatives	Nor has the proponent analyzed an alternative where roof-top solar would be constructed to achieve Nevada's goal of 50% renewable energy by 2030 (page ES-1), which is an alternative that the Council specifically requested to be analyzed in our scoping comments (DTC 2018, page 2). An alternative that considers roof-top solar is not even listed in Table 2.5-1, which includes alternatives considered but eliminated from detailed analysis.	Refer to Master Response 1: Alternatives for a discussion of the alternatives review process under NEPA and the considered alternatives and requirements. Distributed generation solar also was rejected from detailed consideration because they typically generate less than 10-MW of energy. Distributed generation is a different type of facility and does not meet the purpose and need. Rooftop solar was addressed in Table 2.5-1 of the Draft RMPA/EIS, under Distributed Generation, which includes, "use of solar PV panels on a business or home to generate electricity for on-site consumption."
B10-9	8/24/2019	LaRue, Edward	Desert Tortoise Council	Alternatives	(5) In spite of the significant programmatic regional planning effort for solar energy development in Nevada and five other states in the Programmatic Solar Energy Development Plan for Six Southwestern States (PEIS; DOE and BLM 2012), the proponent has refused to conform to that plan by locating proposed development outside any of the designated Solar Energy Zones (SEZ). A search of volume one of the DEIS for the term, "SEZ," reveals that it appears twice: once on page 3-85 in reference to nearby development and on page 3-132 with reference to tribal interviews. Otherwise, the proponent does not explain why the "world's largest" proposed solar field is not being developed within a designated SEZ, which is a significant deficiency in the DEIS to fully analyze environmental impacts.	Refer to Master Response 1: Alternatives for a discussion of the applicability of the Solar PEIS (2014) to this application, and the designation of the Project site as a variance area and not a solar exclusion area. The evaluation under NEPA has followed the legal requirements in place given the status of the ROW application.
B10-10	8/25/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	An even more significant impact, the proponent has selected sites identified in the PEIS that are to be managed as regional Priority 1 and 2 linkage corridors for tortoises. Large-scale habitat loss in this	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS

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					conservation, connectivity corridor should not be authorized. USFWS and BLM know these areas require protection to achieve recovery.	during the ongoing Section 7 consultation for this project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM has reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS. Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.
B10-11	8/26/2019	LaRue, Edward	Desert Tortoise Council	BLM Management	We understand that the BrightSource Energy, LLC ROW application was filed in 2008, prior to completion of the Solar PEIS in 2012, and the DEIS does not reveal when the proponent acquired the rights. But we assume the rights were acquired with full knowledge that development of this site would not conform or comply with the accepted programmatic approach to energy development in Nevada. In our estimation, the proponent should have performed tortoise studies before acquiring the ROW application or as an initial part of site assessment, and their intent to develop it in spite of serious and significant environmental impacts and the potential loss of 1,100is unacceptable and inconsistent with the Federal Land Policy and Management Act (FLPMA).	There are no requirements under FLPMA or NEPA for conducting surveys as part of a private-party to private-party transaction. The appropriate surveys and analysis have been conducted under NEPA in response to the ROW application submitted by the Applicant. Refer to Master Response 2: Mojave Desert Tortoise for a discussion of the assessment of impacts, mitigation, and alternatives identified to reduce, but not eliminate, impacts to desert tortoise, as well as additional information on the mowing alternatives and the long-term monitoring that will be employed.
B10-12	8/27/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	(6) Contrary to the following statement, “There are no known areas large enough to accept the desert tortoises that meet the USFWS desert tortoise translocation guidance definition of ‘depleted population,’” (i.e., 10.1 tortoises per square mile as per the footnote on page 3-86) in the past several years, the USFWS has displaced hundreds, if not thousands, of tortoises out of the Desert Tortoise Conservation Center in Las Vegas throughout southern Nevada in the name of “population augmentation” (see DTC 2012, available upon request). Based on this observation, itis not apparent that the proponent has discussed this issue with pertinent USFWS personnel. We do not support the distant translocation of so many tortoises (estimates of 215 adults and 900 or more juveniles), but also question the alternatives that would result in mowing half or all of the site and reintroducing juvenile tortoises into the job site where they would be subject to crushing and mutilation during operations and maintenance (see point 10 below).	Refer to Master Response 2: Mojave Desert Tortoise (under Tortoise Translocation) regarding the BLMs ongoing consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action. Further information is also available in the master response on the mowing alternatives (under Initial Mowing During Construction), the long-term monitoring that will be employed, a full explanation of the activities that would occur during operations and maintenance (under On-Going Operations and Maintenance Trimming), and how impacts to tortoise are minimized during operations and maintenance. Additional language has been added to the Final RMPA/EIS regarding vegetation trimming during operations and maintenance.
B10-13	8/28/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	Also, the proponent’s own studies show that only two tortoises were found in Area E, which is comprised of 402 acres and Area F, which is comprised of 1,832 acres. So, the proponent’s focused tortoise surveys in the two eastern-most survey areas found 2 tortoises on 2,232 acres, which is 3.4square miles, which equates to 0.6 tortoises/square mile. So, in spite of stating there are no nearby depletion areas of fewer than 10 tortoises per square mile, they fail to recognize that even their own studies have identified depletion areas within the 44,000-acre study area. As given in point 4above, this is another compelling reason for the proponent’s need to expand surveys into eastern portions of the 44,000 acres, on approximately 32,000 acres that have not been surveyed. We believe that these observations not only refute the proponent’s claim that there are no available areas of depleted tortoise populations, they suggest that the proponent has not sufficiently analyzed tortoise occurrence within the action area, which we construe to be the entire 44,000 acres.	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered, including the reasons why development area F was excluded from the alternatives and the consideration of other areas within the 44,000-acre (17,806-acre) application area and off-site options. Development area E was included in the development but impacts to threecorner milkvetch habitat were identified here as significant. The alternatives were developed to balance impacts to these resources. The areas where threecorner milkvetch habitat are found are not likely good areas for desert tortoise due to the pervasive sandy soils that support threecorner milkvetch but likely make burrowing very difficult for tortoise.
B10-14	8/29/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	(7) The observations given above lead to another serious concern with the proponent’s lack of a full impacts analysis. We note in Table 2 on page 35 of Phoenix Biological Consulting (2018b) that the action area and the survey areas are exactly the same. Whereas the survey area is reported to be 11,200 acres, we were led to believe in the BLM’s Notice of Intent (BLM 2018) that the action area is the 44,000-acre	Two surveys for desert tortoise were performed, with one report dated January 30, 2018, covering fall 2017 surveys. The second report, also incorporated by reference into the Draft RMPA/EIS and provided on the ePlanning website, is dated July 25, 2018 and covers additional areas

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					application area. It is not apparent that the proponent discussed the appropriate size of the action area with the USFWS. An action area is defined by regulation as "...all areas to be affected directly or indirectly by proposed development and not merely the immediate area involved in the action (50 CFR §402.02)."	<p>surveyed in Spring 2018. Between the two reports, 11,200 acres (4,532.5 hectares) were surveyed to find 7,100 acres (2,873 hectares) for development. This information was also provided in Table 3.8-1 of the Draft RMPA/EIS, on page 3-81.</p> <p>Approximately 40 percent more areas than was needed was surveyed in order to site the 7,100 acres (2,873 hectares) to reduce environmental impacts. Several resources other than just desert tortoise were considered in the siting. The Action Area was not defined as 44,000 acres (17,806 hectares). The ROW application area was 44,000 acres (17,806 hectares), which is not the action area. The Project area was described in the NOI, where it stated, "The proposed Gemini Solar Project includes 7,115 acres (2,879 hectares) of federal lands administered by the BLM."</p> <p>Indirect effects were addressed throughout the Draft RMPA/EIS (refer to pages 33-83, 3-84, 3-87, 3-88, 3-89, and 3-90). The impacts to tortoise in the region are discussed in terms of movement corridors, connectivity, and gene flow.</p> <p>Consultation with the USFWS has been ongoing. Refer to Master Response 2: Mojave Desert Tortoise regarding consultation with the USFWS under Section 7 of the ESA.</p>
B10-15	8/30/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	For compelling reasons identified above in points 4 and 6, the Council feels strongly that the proponent has neglected to implement this regulation, thereby failing to reveal (a) there may be depleted tortoise populations within the unsurveyed 32,000 acres within the proponent's 44,000-acre ROW application area (as are already documented in Areas E and F) where the losses of an estimated 1,100+ tortoises may be avoided; and (b) if tortoise densities to the east are as low as they are in Areas E and F, it may be better to translocate displaced tortoises to the east, rather than to the south, as currently proposed (see page 3-87). This assumes that there are suitable tortoise habitats to the east and, if not, then development to the east would be the most prudent location for the facilities.	Refer to Response to Comment B10-13. Low tortoise densities were found in development areas F and E, likely because sandy soils greatly limit burrowing. Soil maps supported the observations, and the presence of the threecorner milkvetch which only grows in sandy soils further solidifies this conclusion. Through consultations with the USFWS, it was agreed that the areas to the south of the Project area have similar densities and habitat quality as Project development areas A, B, and the southern part of D. Consultation with the USFWS has been ongoing. Habitat and translocation are addressed in the Biological Assessment and Desert Tortoise Translocation Plan, included as an appendix to the Final RMPA/EIS.
B10-16	8/31/2019	LaRue, Edward	Desert Tortoise Council	Alternatives	In the absence of these surveys and analyses, the proponent has not adequately analyzed potential impacts of the various alternatives or the potential to develop areas of lower tortoise densities in what should be the action area.	Refer to Responses to Master Response 1: Alternatives for a discussion of the alternatives considered, why development area F, which had lower densities of desert tortoise but high densities of threecorner milkvetch, was not included in any alternatives, and why additional areas within the application area, including to the east, were not included in alternatives. The appropriate considerations were made for desert tortoise impacts and translocation.
B10-17	9/1/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	We are concerned that the proponent has not used the results of its own surveys to minimize impacts. The proponent has not demonstrated any willingness to avoid areas of higher tortoise densities in Area B. In fact, it is counterintuitive that the proponent, having found only one tortoise in the 1,832-acre Area F, has excluded that area from the Project Development Area shown in Figure 6-1 of the Plan of Development.	Refer to Master Response 1: Alternatives for the reasons why development area F was excluded from the alternatives and Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the recognized impacts to desert tortoise and the mowing alternatives to reduce impacts in areas with high density of desert tortoise (e.g. development area B).
B10-18	9/2/2019	LaRue, Edward	Desert Tortoise Council	Analysis Methods and Data	We contend that the proponent has not exercised due diligence within the 44,000-acre action area and that the BLM must adopt the No Action Alternative until which time the proponent has completed the necessary surveys and subsequent analyses.	The commenter's preference for the No Action Alternative is noted. Refer to Master Response 1: Alternatives for a discussion of the alternatives considered, including other areas of the 44,000-acre (17,806-hectare) application area and off-site options.

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B10-19	9/3/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	(8) The Council has serious concerns with the proponent's lack of analysis for the efficacy of mowing and subsequent tortoise repatriation into mowed areas. The DEIS fails to reveal if mowing has been implemented elsewhere and if so, what monitoring studies have revealed. We understand that mowing was used for an 80-acre± solar site in Pahrump, Nevada (Stantec 2015) but that it has not been monitored properly and the vegetation was mowed to near ground level. We do think that mowing may be a viable experimental approach for several hundred acres that would displace a dozen tortoises, for example. But the displacement of more than 1,100 tortoises from a 7,100-acre±site (or an unidentified number of tortoises under the hybrid alternative, see point 11 below) in the absence of analyses of any previous studies is unacceptable.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing method and alternatives, the impacts from that alternatives on desert tortoise, and acknowledging the mowing method a new method and the long-term monitoring that will be employed. No long-term data is available as this technique is new. This method has been employed on the small-scale project mentioned by the commenter, but published data is not available on the outcome in relation to desert tortoise reoccupation. Comparing the Project to another site would not be possible.
B10-20	9/4/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	Because mowing and repatriation remains experimental, the Council recommends the following if the No Action Alternative is not adopted: (a) alternatives should be developed by biologists in case the implemented methodologies are unsuccessful;	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method, and the long-term monitoring that will be employed. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise, including any adaptive management to address if methodologies are unsuccessful, as USFWS deems appropriate. The Long-Term Monitoring Plan will also include more information on monitoring tortoises across multiple years and requirements for performing periodic health checks on tortoises to ensure they remain healthy.
B10-21	9/5/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	(b) USFWS should require adequate monitoring and approve alternatives;	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method, and the long-term monitoring that will be employed. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise including any adaptive management if methodologies are unsuccessful, as USFWS deems appropriate. The Long-Term Monitoring Plan will also include more information on monitoring tortoises across multiple years and requirements for performing periodic health checks on tortoises to ensure they remain healthy. Additionally, vegetation surveys within the Project facility will be conducted to ensure vegetation remains suitable for tortoises.
B10-22	9/6/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	and (c) mowing must be carefully monitored by BLM to ensure it is performed properly.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method, and the long-term monitoring that will be employed. Vegetation under the solar arrays would be cut or trimmed by hand during operations and maintenance. Motorized mowing equipment would not be used once tortoises are reintroduced to the Project site. Mowing would only occur in the solar array areas where vegetation can affect the panels, equipment, or access.
B10-23	9/7/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	(9) A related concern is how the proponent intends to avoid crushing juvenile tortoises during operations and maintenance, and the foreseeable vulnerability of these small tortoises to predators, particularly common ravens and coyotes, when (if) small tortoises repatriate the mowed vegetation areas. According to page 6-1 of the Plan of Development, the vegetation would be mowed to a height of 24 inches, which may not be sufficient cover to conceal juvenile tortoises. Juvenile tortoises are notoriously difficult to see, and are likely to be at more risk than adult tortoises to crushing by project personnel after project development. These are foreseeable impacts that are not covered under either indirect effects (3-87) or residual effects (3-88) in the DEIS.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance, including juvenile tortoises. Additional desert tortoise protection measures would be required to reduce effects during O&M, as identified in the Project-specific Biological Opinion and Incidental Take Permit." The measures that directly address and protect all tortoise during operations and maintenance. Much of the vegetation on the Project site in the development areas is already under 24 inches (61 centimeters).

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B10-24	9/8/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	(10) The Council contends that the fatal flaw to any alternative involving mowing is that vegetation is to be mowed every three years to a height of nine inches (this method is revealed in Table 4-1 of the Plan of Development, although we could not find a detailed description of this maintenance method in the text). Whereas we are not sure if 24 inches will conceal juvenile tortoises, we are certain that nine inches will not conceal them. Mowing areas that are repatriated by juvenile tortoises will predictably result in crushing and mutilating subadult tortoises that cannot be found by traditional survey methods.	<p>The POD available with the Draft RMPA/EIS was for the Proposed Action, which is a full traditional development method with no tortoise reintroduction. The table referenced does not apply to the mowing alternatives. The 9-inch (23-centimeter) height referred to mowing in traditional development areas. It is clearly stated throughout the Draft RMPA/EIS and Biological Assessment, included as an appendix to the Final RMPA/EIS, that vegetation would be trimmed to 24 inches (61 centimeters) but not less than 18 inches (46 centimeters) where justified. The height of 24 inches (61 centimeters) for mowed vegetation is referenced in the Draft RMPA/EIS on pages 2-8, 2-9, 3-54, 3-57, 3-60, 3-64, 3-99, 3-136, 3-148, and 3-172. Vegetation under the solar arrays would be cut or trimmed by hand during operations and maintenance and not mowed, as described in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance). Clarifications have been made in the Final RMPA/EIS. Motorized mowing equipment would not be used once tortoise are introduced back into the solar facility. Mowing would only occur in the solar array areas where vegetation can affect the panels, equipment, or access.</p> <p>The POD has been revised to the Hybrid Alternative as available with the Final RMPA/EIS.</p>
B10-25	9/9/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	(11) We also note that, whereas the impacts associated with the Proposed Action on page 3-82 reveal that an "...estimated 900 or more juveniles..." may be affected, from there on, the impacts associated with the "All Mowing Alternative" (pages 3-85 through 3-88) and the "Hybrid Alternative" (pages 3-88 through 3-90) are limited to impacts to adult tortoises, with no mention, whatsoever, of juvenile tortoises. We are not sure if this is an oversight or failure to disclose the full impacts of these two alternatives, but in any case, the DEIS is deficient in this matter, which must be resolved in the Final EIS.	<p>The All Mowing and Hybrid Alternatives discussions addressed juveniles as well as adults and/or referred to the impacts to "desert tortoise" encompassing both. Page 3-86 of the Draft RMPA/EIS under the All Mowing Alternative stated, "Tortoises that would be reintroduced, would be held in a pen and then reintroduced at the capture location within the Project site once construction is complete. For distant translocation, approximately 34 adult desert tortoises and an unknown number of juveniles would be translocated to a site south of development areas B and D. Approximately 220 adult tortoises would be reintroduced to the Project site or translocated into the Project area after construction." Pages 3-88 to 3-38 under the Hybrid Alternative stated, "Approximately 183 adult tortoises would be allowed to re-enter the Project site or translocated back into the Project area and 36 adult desert tortoises and an unknown number of juveniles would be distantly translocated." It should be noted that the guidelines for tortoise surveys (USFWS 2010 spreadsheet, as stated on page 5 of the 2018 Desert Tortoise Survey Report) require reporting only of tortoises over 180 mm MCL, which is why the data was presented for adult tortoises in the Desert Tortoise Survey Reports, the Draft RMPA/EIS, and the Biological Assessment. The number of juveniles expected was an estimate.</p> <p>For further clarification, an estimate of juveniles has been added to Final RMPA/EIS for the All Mowing and Hybrid Alternatives discussions. This addition does not change any conclusions, which acknowledge adverse effects.</p>
B10-26	9/10/2019	LaRue, Edward	Desert Tortoise Council	Threatened, Endangered, and Candidate Species	(12) The Council does not believe that this project should be developed on this site because of the number of tortoises that are estimated to occur. Even so, we understand that the BLM in its ROW permit and plan amendment and the USFWS in its biological opinion could still authorize this project. Given that possibility, we are attaching a set of construction Best Management Practices (BMPs) (Desert Tortoise Council 2017) and restoration BMPs (Abella and Berry 2016) both developed by the Council for the proponent's consideration and use. Although these submissions should not be construed as Council	The comment is noted. The BMPs will be considered during preparation of the various construction and operations plans needed for this Project, should it be approved.

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					endorsement of any ground-disturbing alternative, we feel that implementation of our BMPs would enhance tortoise protection if the project is approved.	
B11-1	9/5/2019	Maggi, Andy	The Nevada Conservation League	Threatened, Endangered, and Candidate Species	We encourage the BLM to conduct due diligence on the environmental impacts of such projects and encourage them to require appropriate mitigation to protect native habitat, and we applaud and encourage those initiatives. We also understand that the Gemini Project has reached an agreement with US Fish and Wildlife on a desert tortoise solution that includes reintroduction to the original habitat when construction is completed. This is an interesting approach that deserves review and consideration.	Environmental impacts were addressed per the requirements of NEPA on this Project. Numerous mitigation measures were required, as identified in Appendix H to the Draft and Final RMPA/EIS. The Section 7 ESA consultation with USFWS is underway. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing alternatives as a new approach to reduce impacts to desert tortoise, vegetation, rare plants, and other resources. As stated in the master response, the consultation with USFWS under Section 7 of the ESA is underway with a Biological Opinion anticipated the first week of November. The Final RMPA/EIS has been appended with the Biological Assessment and Desert Tortoise Translocation Plan.
B12-1	9/5/2019	McAllister, Elise	Partners In Conservation	Alternatives	1: General: Southern Nevada is our home and we find it offensive that any 'flat' area in southern Nevada is considered acceptable for solar farms. We find the use of solar to be more acceptable per homes and buildings but NOT for completely denuded vast acres of public land. The development of the urban Las Vegas area and it is continual expansion takes enough land from the public already as does the multitude of other solar farms.	Refer to Master Response 1: Alternatives for the alternatives review process under NEPA and for the considered alternatives and requirements. Distributed generation solar was rejected from detailed consideration because they typically generate less than 10-MW of energy. Distributed generation is a different type of facility and does not meet the purpose and need. The commenter's opinion regarding the development of the urban area and it is expansion is noted.
B12-2	9/6/2019	McAllister, Elise	Partners In Conservation	Visual Resources	We are also offended by I-15 being lined-basically from state line to state line (AZ through NV to UT) by solar farms. The serenity and beauty of traveling along I-15 through northeast Clark County is impacted by solar farms already. Building this project south of I-15, next to the Valley of Fire and the Muddy Mountains will destroy the only remaining scenic and serene landscape between Moapa Valley and Las Vegas.	As discussed in Table 3.10-1 on page 3-109 of the Draft RMPA/EIS and shown in the visual simulations provided in Appendix D, the Project would have a strong degree of visual contrast as viewed from I-15 and would extend views of utilities when traveling along I-15 through northeast Clark County, as the commenter notes. This adverse visual impact is acknowledged in the Draft RMPA/EIS. However, from KOP 15 and 19, near the Muddy Mountains and Muddy Mountains Wilderness Area, the degree of contrast created by the Project would be weak. As shown on Figure 3.10-1, Valley of Fire State Park is wholly outside the viewshed of the Project. Recreational users of the Muddy Mountains and Valley of Fire State Park would be minimally affected. Some impacts along the initial stretch of Valley of Fire Road towards and returning from Valley of Fire State Park and the Muddy Mountains would occur, but would occur only when the motorist is in close proximity to the solar field, near I-15 (as discussed on pages 3-108 to 3-113 of the Draft RMPA/EIS), as described in Master Response 7: Impacts to Recreation .
B12-3	9/7/2019	McAllister, Elise	Partners In Conservation	Recreation	2. General: This project impacts our communities economically; OHV use and non-OHV use will be diminished in the area and the impact to visitation to Valley of Fire and Lake Mead is unknown and both of those destinations bring economic benefits to Moapa Valley.	Socioeconomic impacts are addressed in Section 3.15: Socioeconomics and Environmental Justice and were not found to be adverse. As discussed on Page 3-16 of the Draft RMPA/EIS, the Project would result in the closure of 46 miles (74 kilometers) of OHV trails. Refer to Master Response 7: Recreation for further explanation of the impacts to OHV use. Access to Valley of Fire State Park and Lake Mead would not be impeded by the Project and access via Valley of Fire Road would be unchanged. Temporary traffic impacts could occur as a result of Project construction, as noted on page 3-16; however, access would not be severed. As discussed in Response to Comment B12-2, the Project would have a weak degree of change as viewed from the Muddy Mountains and users of Valley of Fire

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						State Park would be unaffected by the Project because it is outside of the Project viewshed. Lake Mead is also outside of the Project viewshed. Recreational users of Valley of Fire State Park and Lake Mead would be unaffected by views of the Project. The use of these recreational areas is not anticipated to be impacted nor the economic benefits that their use brings to the Moapa Valley. Refer to Master Response 7: Recreation for more information on how recreational impacts were addressed.
B12-4	9/8/2019	McAllister, Elise	Partners In Conservation	Threatened, Endangered, and Candidate Species	4. General: It proves the point, to us, that money can buy anything. We have lived here for 20-30 years with the restrictions imposed by the listing of the desert tortoise as a threatened species. Now, the Gemini project, like all large developments, has enough money to 'mitigate' for the loss of tortoises. Small business owners could NEVER buy the influence that large developments can and it is sad to see that tortoises and other wildlife and the vegetation they depend on to survive are of little consequence when big development wants something. We have issues and concerns with the overly restrictive regulations imposed on all of us because of the tortoise, so the fact that money can buy mitigation is doubly offensive and sadly means that money can buy anything-even the further demise of the tortoise and its habitat.	Impacts to desert tortoise have been addressed and mitigation proposed in accordance with legal requirements of NEPA, FLPMA, and ESA.
B12-5	9/9/2019	McAllister, Elise	Partners In Conservation	Recreation	5. Specific: This project directly and indirectly negatively impacts recreation in our area. It raises specific concerns to us in regards to access. Access of the Arrowhead Trail, the Old Spanish Trail and the Bitter Springs Backcountry Byway which directly provides access to many places.	Refer to Master Response 7: Recreation for more information on how impacts to recreational access were addressed. Impacts to the OSNHT as a corridor through the entire Project area are also addressed in Section 3.14: Old Spanish National Historic Trail of the Draft RMPA/EIS and are acknowledged as adverse. Refer to Master Response 5: Old Spanish National Historic Trail for more information on how OSNHT impacts were addressed.
B12-6	9/10/2019	McAllister, Elise	Partners In Conservation	Recreation	Some of that endless money that provides mitigation for the tortoise should be directed to protect the limited recreation that can occur CURRENTLY INTHIS AREA. There should be no restrictions, limitations, seasonal or otherwise temporary closures, no access blocked, no current use denied.	Refer to Master Response 7: Recreation for a discussion of how regarding impacts to recreational access to recreational facilities in the region were addressed and why the loss of some recreational land in the ERMA was considered minor.
B12-7	9/11/2019	McAllister, Elise	Partners In Conservation	Recreation	The parts of this project that are on public land that currently allows recreation and/or motorized travel should NOT be impeded in any way. The answer is quite simple to us; do not build solar farms on currently used public land for recreation and access. Recreation and access has been drastically reduced with the regulations imposed by the listing of the desert tortoise as threatened, by the urban growth of the Las Vegas area, by endless special and restrictive designations of wilderness, NCA's, monuments, etc. already. Recreation is about to become extinct in Clark County. We request reducing the footprint of this project so that is does not impede-directly or indirectly-current recreation use and current access.	Refer to Master Response 7: Recreation for a description of how recreational use and access was characterized and addressed in the Draft RMPA/EIS.
B13-1	9/5/2019	Miller, Garry	TransWest Express LLC	Land Use	As set forth in TransWest's September 13, 2018 letter to BLM regarding the Gemini Solar Project ROW application (see Attachment 1), the Gemini Solar Project would directly interfere with TransWest's BLM ROW grant for the TWE Project. TransWest determined that the gen-tie lines for the Gemini Solar Project would adversely affect the integrity of, and TransWest's ability to operate, the TWE Project. TransWest therefore urged BLM to deny Solar Partners ROW application until it was confirmed that the proposed facilities would not interfere with the TWE Project facilities. While Trans West and representatives of Solar Partners have discussed project coordination, efforts to date have not resolved the conflicts and Solar Partners has not committed to coordinate with TransWest to resolve conflicts.	The BLM is aware of existing land use authorizations in the Project area, including the TransWest facilities (refer to Table 3.1-1 and Figure 3.1-1 of the Draft RMPA/EIS). Section 3.1: Land Use addressed the potential for conflict with existing land use authorizations. As analyzed on page 3-6 of the Draft RMPA/EIS, the Project gen-tie lines have the potential to conflict with existing and proposed transmission lines. To address the potential conflict with other gen-tie lines, including TransWest Express, MM Land Use (LU)-1 requires the Applicant to coordinate with transmission line ROW holders/Applicants to identify potential conflicts between applicable transmission line and Project gen-tie lines. Any necessary adjustments to the gen-tie line design would be incorporated into final design and engineering plans to avoid any conflicts. Transmission lines can be engineered to feasibly and safely cross perpendicularly by adjusting the locations or heights of conductor and support structures including towers. The specific design features necessary to avoid conflict with the TransWest Express lines would be identified during final engineering after

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						<p>coordination with transmission ROW holders/Applicants according to MM LU-1.</p> <p>As stated in the POD, released with the Draft RMPA/EIS, on page 1-27, "Arevia would also develop a Cooperative Engineering Agreement with TransWest and other ROW holders prior to construction to ensure that the compatibility of the crossings." This agreement would be requirement of a Final NTP for construction activities of the solar facility.</p>
B13-2	9/5/2019	Miller, Garry	TransWest Express LLC	Land Use	BLM has also made it clear that it will require common use of rights-of-way only when those uses are compatible, 43 C.F.R. §2805.15(b), considering engineering and technical compatibility, 43 C.F.R. §2801.2(c). Without resolving the conflicts between the Gemini Solar Project and the TWE Project, BLM may not issue a ROW grant for the Gemini Solar Project because the uses are incompatible leaving the BLM with only the no action alternative.	Refer to Response to Comment B13-1. The Project gen-tie lines would be engineered such that the crossings with the TransWest Express lines meet safety requirements for separation. The Project gen-tie lines would be engineered to be compatible with the TransWest Express lines. The Apex area includes numerous transmission corridor that cross each other, demonstrating that it is feasible.
B13-3	9/5/2019	Miller, Garry	TransWest Express LLC	Land Use	DEIS Fails to Adequately Analyze and Disclose Impacts on Existing ROW Grants. Section 3.1.2 of the DEIS discloses that the Gemini Solar Project could conflict with existing land use authorizations. While the DEIS mentions safety concerns related to the height of the Gemini Solar Project gen-tie line where it crosses other transmission lines, it does not discuss potential conflicts related to the location of structures and the necessity of maintaining adequate clearances from existing and proposed tower locations. It is not just vertical separation between transmission lines that is of a safety and reliability concern, but also horizontal separation. For instance, for safety and reliability reasons Trans West policy does not allow other transmission towers within its ROW. TransWest also has standards for minimum horizontal separation distances between TWE Project structures and other electrical lines. The DEIS fails to analyze any of these significant issues. By its failure to do so, the DEIS is deficient in its disclosure of potentially significant impacts of the action alternatives.	Refer to Response to Comment B13-1. The analysis presented on page 3-9 of the Draft RMPA/EIS analyzed whether conflict, including but not limited to safety conflicts, would occur between the Project gen-tie lines and other land use authorizations, including transmission lines. Line clearance and structure location requirements were considered as potential sources of conflict. MM LU-1 requires coordination and engineering to address any conflicts.
B13-4	9/5/2019	Miller, Garry	TransWest Express LLC	Land Use	Proposed Mitigation Measures in the DEIS are Inadequate. The BLM proposes mitigation measure LU-1 to avoid adverse effects during construction and operation of the Gemini Solar Project. LU-1 requires coordinating construction activities and coordinating to ensure that Gemini Solar Project transmission lines are designed to meet requirements for separation distances between lines. LU-1 is inadequate. LU-1 should be revised to require the Gemini Solar Project developer to coordinate with existing ROW grant holders to ensure that the proposed project does not affect the integrity of, or the existing ROW grant holder's ability to operate, its facilities. Such coordination must include not only vertical and horizontal separation of transmission lines (conductors), towers and other facilities, but coordination of alignments of project facilities and construction work areas to avoid conflicts. Such coordination would be best accomplished through a mitigation requirement for the Gemini Solar Project developer to enter into engineering coordination agreements with existing ROW grant holders committing the developer to work in good faith to avoid conflicts. This mitigation measure must be a requirement of the Gemini Solar Project ROW grant should BLM issue the grant. In the past, BLM has included such a requirement in other ROW grants, such as the TWE Project ROW grant and the Techren Solar, LLC ROW grant.	<p>Development of a Cooperative Engineering Agreement is identified as part of the Proposed Action, and thus, would be required. As stated in the POD, released with the Draft RMPA/EIS, on page 1-27, "Arevia would also develop a Cooperative Engineering Agreement with TransWest and other ROW holders prior to construction to ensure that the compatibility of the crossings." This agreement would be requirement of an NTP for construction of the gen-tie lines. Clarifications have been made to the Final RMPA/EIS. The intent of MM LU-1 identified in the Draft RMPA/EIS was to require the Applicant to coordinate with appropriate ROW holders/Applicants to identify and incorporate all design considerations required to avoid safety and operational conflicts. MM LU-1 effectively eliminates adverse effects that could occur from conflict between the Project and existing land use authorizations.</p> <p>The potential for conflicts in construction activities was addressed in the Draft RMPA/EIS on page 3-9, where it stated, "Construction of the approved transmission projects and the Project could also conflict due to overlapping construction schedules that could create added congestion or traffic safety concerns related to access or staging of materials. To avoid adverse effects during construction and operation of the Project, MM LU-1 would be implemented, which requires coordinating construction activities and coordinating to ensure that Project transmission lines are designed to meet requirements for separation distances between the lines."</p>
B13-5	9/5/2019	Miller, Garry	TransWest Express LLC	Land Use	For the reasons set forth above, the DEIS for the Gemini Solar Project fails to adequately analyze and disclose impacts to existing ROW grant holders.	Refer to Responses to Comments B13-1 through B13-4 that demonstrates these concerns were addressed in the POD and Draft RMPA/EIS.

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B13-6	9/5/2019	Miller, Garry	TransWest Express LLC	Land Use	Furthermore, proposed mitigation measure LU-1 is inadequate to avoid and minimize impacts to existing ROW grant holders.	Refer to Response to Comment B13-4 that explains why the measure is adequate.
B13-7	9/5/2019	Miller, Garry	TransWest Express LLC	Land Use	TransWest continues to object to the issuance of a ROW grant to Solar Partners XI, LLC for the Gemini Solar Project because the proposed project would adversely affect the integrity of, and TransWest's ability to operate, the TWE Project.	Refer to Responses to Comments B13-1 through B13-4 that demonstrates these concerns were addressed in the POD and Draft RMPA/EIS.
B13-8	9/5/2019	Miller, Garry	TransWest Express LLC	Consultation, Coordination, and Public Involvement	Please add TransWest Express LLC, Attention: Garry Miller, 555 Seventeenth Street, Suite 2400, Denver, Colorado 80202, email garry.miller@tac-denver.com, telephone (303) 299-1546, to your mailing and notification list concerning any further action on the Gemini Solar Project ROW application and EIS. As a party potentially affected by BLM's decision, we request formal notification of any decision by BLM regarding the Gemini Solar Project application.	The request has been noted. TransWest Express LLC has been added to the Gemini Project mailing list.
B14-1	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	A. The DEIS Fails to Consider a Reasonable Range of Alternatives The “heart of the environmental impact statement” is a rigorous exploration of alternatives to the proposed action. 40 C.F.R. § 1502.14. BLM must “provide a full and fair discussion of significant environmental impacts” in order to “inform decisionmakers and the public of the reasonable alternative which would avoid or minimize adverse impacts.” Id. §§1502.1, 1502.14; accord California v. Block, 690 F.2d 753, 767 (9th Cir. 1982). It is insufficient for an EIS to only consider alternatives that “are essentially identical.” Friends of Yosemite Valley v. Kempthorne, 520 F.3d 1024, 1039 (9th Cir. 2008). “The existence of reasonable but unexamined alternatives renders an EIS inadequate.” ‘Ilio‘ulaokalani Coal. v. Rumsfeld, 464 F.3d 1083, 1095 (9th Cir. 2006)	Refer to Master Response 1: Alternatives for a discussion of the alternatives review process under NEPA and for the considered alternatives and requirements. The CEQ and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals.
B14-2	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	1. The Proposal and Two Action Alternatives Are Essentially Identical Due to the Uncertainty Surrounding the Effects of “Mowing” The DEIS repeatedly concedes that due to the uncertainty associated with the effect of the mowing alternatives, the impacts in terms of desert tortoise mortality, habitat loss, and connectivity are not meaningfully different. For example, the DEIS alleges: “While some tortoises would be taken under the All Mowing Alternative, the take would be considerably less than under the Proposed Action... [because] tortoises could reoccupy the site when vegetation returns” but in the very next sentence concedes “it is not known whether reoccupation would be successful.” DEIS at 3-88; see also DEIS at 3-90 (“the take [from Hybrid Alternative] would be considerably less than under the Proposed Action...[because] tortoises could reoccupy up to 65 percent of the site when vegetation returns. However, it is not known whether reoccupation would be successful.”) (emphasis added). With regard to the Hybrid Mowing Alternative, the DEIS states: “The Hybrid Alternative would reduce the amount of native vegetation removed from 7,097 acres (2,872 hectares) for the Proposed Action to 2,603 acres (1,053 hectares). Maintaining 4,460 acres (1,805 hectares) of vegetation within the solar facility would allow desert tortoises to reoccupy the site, but the habitat would be highly modified and the success of reoccupation is unknown; therefore, this alternative is considered to result in a loss or take of habitat.” DEIS at 3-89 (emphasis added). ¹⁴ With regard to the cumulative effects, the DEIS similarly relies on reoccupation to claim that the total removal of acreage for desert tortoise occupation will be less under the mowing alternative than the proposal, but fails to acknowledge the concession on the same page, that “it is not known whether reoccupation would be successful.” DEIS at 3-88. What is plain from these concessions is that it is unknown whether desert tortoises reintroduced in or near “mowed areas” will survive and reproduce, thus the DEIS cannot assert that those desert tortoises will not be taken. Further, the desert tortoise habitat within the mowed areas must be considered as “a loss or take of habitat” due to the unknown effectiveness of this method, therefore the net desert tortoise habitat loss is not meaningfully different between the alternatives.	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered and how the mowing alternatives were considered for their potential for reducing severity of effects of the Proposed Action. The Draft RMPA/EIS acknowledges the potential for adverse effects and the loss of habitat from the alternatives; however, the degree of impact is reduced as compared with the Proposed Action. Successful reoccupation of the solar field by desert tortoise after construction must be disclosed as uncertain but the potential for success and, thus, the potential for reduced impacts to tortoise, is greater than for the Proposed Action where approximately 215 adult tortoises and approximately 900 or more juvenile tortoises would be subject to mortality take. The alternatives, therefore, include considerable differences in severity of impact on desert tortoise individuals and habitat, and as such, are sufficiently different and adequate under NEPA. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for more information on desert tortoise impacts from mowing the monitoring that would occur to better understand the method.
B14-3	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	The DEIS assert that the Mowing Alternative would have less impact on connectivity because “Desert tortoises would be able to move through the Project site ...to the North Muddy Mountain to the northeast and to the south, similar to existing conditions.” DEIS at 3-87. ¹⁵ But given the acknowledged uncertainty as to whether desert tortoises can successfully reoccupy the mowed areas, and that the habitat would be “highly modified” even by mowing, this unsupported statement totally fails to evaluate whether there is any basis in fact to conclude that tortoises will traverse thousands of acres of highly modified habitat in a	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing alternatives and disclosure of associated impacts, as well as the reduced potential severity of desert tortoise impacts compared to the Proposed Action. Successful reoccupation and reduced impacts to tortoise connectivity could occur under the mowing alternatives, whereas neither would occur under the Proposed Action. Refer

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					manner that would preserve connectivity. Indeed, connectivity is maintained not by tortoises traversing long distances, as with some other species, but rather by the persistence of overlapping reproducing populations in areas adjacent to each other. If desert tortoises cannot successfully reoccupy the mowed habitat, then connectivity will be lost, not preserved.	to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise.
B14-4	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Dr. Brian Todd’s assessment of the DEIS and action alternatives underscores the uncertainty associated with both the All Mowing and Hybrid Alternatives. Dr. Todd states: “The premise that the Alternative Actions will minimize harm and limit adverse impacts to desert tortoises relies on the untested assumption that mowed habitat would constitute viable habitat for desert tortoise recolonization and long-term use. My knowledge of desert tortoise ecology and years of experience studying the species suggest there are important unknowns related to mowing that make this assumption highly uncertain. See Todd Report at 2–3 (emphasis added), Attachment 1. Dr. Todd explains his scientific basis for concern as to the potential ineffectiveness of the mowing alternatives. In short, there is good reason to think that creosote mowed to a height of only 24” will not provide the necessary shading, temperature regulation, and predator concealment provided by the large creosote on which desert tortoises depend and are behaviorally habituated; that mowed creosote will not provide the food source for kangaroo rats that ensures kangaroo rats will dig dens that juvenile desert tortoises utilize as burrows; and that mowed creosote may not provide the canopy necessary to support the plant biomass on which desert tortoises depend for food. See Todd Report at 2–4.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and the long-term monitoring that will be employed to understand its success. Mowing would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. During operation and maintenance, vegetation under the solar arrays would be cut or trimmed by hand during to a height that allows the vegetation to maintain its habitat function for desert tortoise and to maintain hydrology patterns on the site while not impacting the functionality of the solar panels. Heavy equipment could only be used along established access roads. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise including any adaptive management if methodologies are unsuccessful, as USFWS deems appropriate. The review of Dr. Todd is noted; however, it should also be noted that most vegetation in the Project area is already under 24 inches (61 centimeters) in height. The solar panels provide shade to the ground surface, although how that shade will impact tortoise behavior is not known. Refer to Responses to Comments B14-66 through B14-73 for the response to Dr. Todd's comments on these topics.
B14-5	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Further, Dr. Todd explains that even though mowed areas will not be surrounded by fencing that excludes desert tortoises, it is uncertain whether the mowed areas will be sufficiently permeable by desert tortoises to actually preserve connectivity. See Todd Report at 4–5.	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding connectivity impacts. Refer to Responses to Comments B14-71 through B14-73 for a response to Dr. Todd's analysis of fencing impacts on connectivity.
B14-6	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	An October 2018 letter from the applicant (Arevia) included in the Alternatives Report prepared by the applicant states: “There is, to date, no hard data upon which to evaluate the longer term affects [sic] to the desert tortoise from the VEA project, the only project where mowing and introduction have been tried. As such, the mowing and reintroduction are experimental at best and need to be implemented cautiously and in a measured fashion. The VEA project is 80 acres. The Gemini Solar Project site will be approximately 7,100 acres.” Alternative Report at Appendix C. The DEIS does not include any data or analysis that contradicts this acknowledgment as to the uncertainty of effect for the mowing alternatives, let alone the uncertainty of effects for a project of the magnitude of thousands of acres.	The comment is acknowledged and consistent with the analysis of the Draft RMPA/EIS regarding a level of uncertainty in the mowing approach. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and the long-term monitoring that will be employed.
B14-7	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Dr. Todd also considered the extent to which the VEA project could be used to evaluate the effectiveness of the mowing alternatives. He concluded that the VEA project did not provide data that meaningfully could be used to evaluate the proposed alternatives: To date, only a small ~80 acre solar site — Valley Electric Association Community Solar Project in Nye County, Nevada — has used the mowing and reintroduction method like that proposed here. I have found no information from that project about the success, challenges, or limitations as they pertain to impacts to desert tortoises that could be used to further inform my current evaluation of the DEIS. It is also unlikely given the small size of the Valley Electric project that many tortoises were affected or that there will be much opportunity to inform future use of mowing and recolonization in site designs more broadly. Given the size of tortoise home ranges compared with the size of the VEA site, it is likely that few tortoises are affected and also likely that those that are affected have suitable unmowed refuge habitat outside the small footprint of the VEA footprint. Todd Report at 5 (emphasis added). As Dr. Todd points out, the small size of the VEA project means that	The comment is acknowledged and consistent with the analysis of the Draft RMPA/EIS regarding a level of uncertainty in the mowing approach. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. Long-term effects are unknown as this technique is new, as is acknowledged in the Draft RMPA/EIS. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting

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					it could not be used to meaningfully evaluate the effects of applying the mowing alternative to thousands of acres of habitat because for a small mowed site, tortoises may only be present because they can rely on adjacent areas with retained undisturbed habitat, and large creosote, to meet the needs no longer provided by the mowed areas, whereas for a large site, adjacent undisturbed areas would be too far to meet those needs. See id; see also Todd Report at 3 (explaining how desert tortoises will use burned habitat for feeding when it is adjacent to unburned habitat that meets other basic needs that cannot be met by the burned habitat). Thus, the VEA project does not provide information that could rationally be used to assert that the mowing alternatives will be sufficiently effective to be distinguishable from the proposal in terms of impact to the desert tortoise.	requirements. Refer to Response to Comment B14-75 regarding Dr. Todd's assessment of the Valley Electric Association, Inc. (VEA) project and the Response to Comment B14-66 regarding use of habitat made by Dr. Todd.
B14-8	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	The failure to examine any action alternatives that actually provide for reduced impacts to desert tortoise violates NEPA.	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered and how the mowing alternatives were considered for potentially reducing severity of effects of the Proposed Action, consistent with NEPA.
B14-9	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	<p>2. The DEIS Fails to Adequately Analyze Other Reasonable Alternatives</p> <p>a. The DEIS Improperly Fails to Consider Any Alternative that Would Provide Less than 690 MW</p> <p>Courts have repeatedly found that the failure to provide detailed analysis of feasible alternatives between the extremes of granting in full or denying in full the proposed action violates NEPA. See, e.g., Western Watersheds Project v. Abbey, 719 F.3d 1035, 1050 (EA for grazing permit was arbitrary and capricious where all action alternatives considered same level of grazing, but with changes to the terms and conditions to mitigate impacts, such as installing or removing fencing); Pac. Coast Fed’n of Fishermen’s Ass’ns v. Dep’t of Interior, 655 F. App’x595, 599 (9th Cir. 2016) (agency’s “decision [in EA] not to give full and meaningful consideration to the alternative of a reduction in maximum interim contract water quantities was an abuse of discretion, and the agency did not adequately explain why it eliminated this alternative from detailed study”).</p> <p>The DEIS fails to provide detailed analysis of any alternative in between authorizing a right of way sized for a 690 MW facility and denying the right of way. The DEIS fails to consider in detail any alternative that would authorize a smaller project, generating less than 690 MW, and having a smaller development footprint.</p> <p>BLM cannot reject such alternatives merely by asserting that any project smaller than 690 MW would not meet the purpose and need of the action. Agencies may not give a purpose and need statement “so unreasonably narrow that [alternatives would be eliminated and] the EIS would become a foreordained formality.” Nat’l Parks & Conservation Ass’n v. Bureau of Land Mgmt., 606 F.3d 1058, 1070 (9th Cir. 2009) (quoting Friends of Southeast’s Future v. Morrison, 153 F.3d 1059, 1066 (9th Cir. 1998)). Agencies “should always consider the views of Congress... in the agency’s statutory authorization to act[.]” Nat’l Parks, 606 F.3d at 1070 (quoting Citizens Against Burlington, Inc. v. Busey, 938 F.2d 190, 199 (D.C. Cir. 1991)). NEPA requires agencies to “specify the underlying purpose and need to which the agency is responding,” 40 C.F.R. § 1502.13 (emphasis added). Where the relevant statutory directives require the agency to consider whether an action is “in the public interest” prior to issuing a permit, the agency “must speak to broader considerations than simply the permit application when stating the purpose and need for an action.” Backcountry Against Dumps v. as to other issues sub nom. Backcountry Against Dumps v. United States Dep’t of Energy, No. 3:12-CV-03062-L-JLB, 2017 WL 2988273(S.D. Cal. Jan. 30, 2017) (“DOE gave little indication of an underlying reason for undertaking the FEIS other than [the energy company’s] permit application” for transmission line).</p>	<p>Refer to Master Response 1: Alternatives for a discussion of the alternatives considered, including other areas of the 44,000-acre (17,806-hectare) application area and off-site options and how the alternatives that were considered for full analysis differ. The CEQ and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals.</p> <p>MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.</p>
B14-10	9/4/2019	Schoenhut, Karimah	Sierra Club	BLM Management	Here, the DEIS merely states: “Taking into account the BLM’s multiple-use mandate, the BLM’s purpose and need for this action is to respond to the ROW application submitted by the Applicant. DEIS at 1-1. The DEIS then describes the applicant’s goal, stated in its application, of providing 690 MW of electricity to meet demand in Nevada and California spurred by their respective renewable energy portfolio standards, which will require several gigawatts of new renewable energy by 2030 to satisfy. Id. But the purpose and need statement in the DEIS does not actually “take into account” BLM’s multiple-use mandate. FLPMA defines “multiple use” as “the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs	Refer to Master Response 1: Alternatives for a discussion of the purpose and need and why it is adequate under NEPA. The purpose and need is to respond to the application submitted by the Applicant under FLPMA. The BLM prepared an objective analysis of the Project as required under NEPA to support the decision to approve or deny the application. The master response also includes a discussion of the process for consideration of alternatives in compliance with NEPA.

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					of the American people,” and specifically contemplates “the use of some land for less than all of the resources” and the long term preservation of “natural scenic, scientific and historical values.” 43 U.S.C. § 1702(c). Accordingly, FLPMA cautions the Secretary to give consideration to “the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.” Id. “As the Supreme Court has observed, ‘multiple use’ is a ‘deceptively simple term that describes the enormously complicated task of striking a balance among the many competing uses to which land can be put.” Nat’l Mining Ass’n v. Zinke, 877 F.3d 845, 872 (9th Cir. 2017), cert. denied sub nom. Am. Expl. & Min. Ass’n. v. Zinke, 139 S. Ct. 309 (2018), and cert. denied sub nom. Nat’l Min. Ass’n v. Zinke, 139 S. Ct. 57 (2018) (quoting Norton v. S. Utah Wilderness Alliance, 542 U.S. 55, 58, 124 S.Ct. 2373, 159 L.Ed.2d 137 (2004)). “It does not...require the agency to promote one use above others. Nor does it preclude the agency from taking a cautious approach to assure preservation of natural and cultural resources. The agency must weigh competing interests and, where necessary, make judgments about incompatible uses; a particular parcel need not be put to all feasible uses or to any particular use.” Id. citing New Mexico ex rel. Richardson v. Bureau of Land Mgmt., 565 F.3d 683, 710 (10th Cir. 2009). In narrowly constraining the purpose and need to eliminate alternatives that do not provide for anything smaller than the applicant’s proposed full 690 MW size facility, BLM has failed to provide a purpose and need that reflects its obligation to balance the various uses for which the land in question is open or available under the Las Vegas RMP, in particular its use for the preservation of desert natural resources, and has failed to provide a purpose and need statement that reflects its duty to evaluate whether the permit application is in the public interest. Moreover, BLM plainly has the authority to use the right-of-way authorization process to limit the approval to a smaller alternative. See, e.g., 43 C.F.R. §2805.10(a)(1) (stating that BLM may modify the proposed use).	MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
B14-11	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	Consequently, the failure to consider obvious alternatives involving smaller projects with reduced footprints lower than 7100 acres merely because they would not provide the full 690 MW violates NEPA.	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered and how the mowing alternatives were considered for reducing severity of effects of the Proposed Action, consistent with NEPA.
B14-12	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	Based on this improperly narrow purpose and need, the DEIS also rejected other alternatives without detailed analysis. See DEIS Table 2.5-1 (rejecting Brownfields alternative because sites large enough for 690 MW were not close to transmission); Alternatives Report at 4-2 (stating that only alternative configurations of at least 7100 acres were considered); id. at 4-3 (stating that alternatives on other BLM lands were screened out if less than 7100 acres required for a 690 MW facility).	The detailed analysis of why these alternatives were rejected was provided in the Alternatives Report, incorporated into the Draft RMPA/EIS by reference. Master Response 1: Alternatives provides additional information on the alternative evaluation process.
B14-13	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	b. The DEIS Improperly Fails to Consider Alternative Footprints that Would Avoid the Areas of Highest Tortoise Density The information in the applicant’s Alternatives Report concedes that “The southern portion of the application area includes a large swath of relatively flat land not included in the 10,000-acre (4,046-hectare) proposed development area that was reviewed for suitability. This area is located further from both I-15 and Valley of Fire Road than the proposed development, which would impede access and would locate the solar facility further from existing transmission lines, requiring construction of longer gen-tie lines. For these reasons, this area was eliminated from further consideration.” Applicant’s Alternatives Report at 4-1 to 4-2. In its discussion of alternatives that were considered but eliminated without detailed analysis, the DEIS does not even mention an alternative involving this area, and instead refers to the Applicant’s Alternatives Report generally for other alternatives considered. DEIS at 2-10 to 2-11. Based on the limited information provided in that report, BLM has failed to provide an adequate justification for failing to evaluate that portion of the application area. The reasons proffered in the Alternatives Report do not establish that shifting the footprint into that area would not be feasible or reasonable; instead, they merely indicate it would be less desirable to the applicant because the location is farther from roads and transmission lines. There is no information to indicate that, aside from being less convenient to the applicant, it is not technically or economically feasible.	Refer to Master Response 1: Alternatives for a discussion of the reasons why development area F was excluded from the alternatives. Desert tortoise and threecorner milkvetch have an inverse relationship for habitat suitability. Desert tortoise is found where threecorner milkvetch is not, and threecorner milkvetch is found where desert tortoise is not. Development area E was included in the development but impacts to threecorner milkvetch habitat were identified here as significant. The alternatives were developed to balance impacts to these resources. The areas where threecorner milkvetch habitat are found are not likely good areas for desert tortoise due to the pervasive sandy soils that support threecorner milkvetch but likely make burrowing very difficult for tortoise. Refer to Master Response 1: Alternatives for a discussion of the alternatives considered, including other areas of the 44,000-acre (17,806-hectare) application area and off-site options. Page 4-1, under Section 4.2.1 of the Alternatives Report, incorporated into the Draft RMPA/EIS by reference, provides more information on areas considered but ruled, out, including areas on the eastern edge of the application area. The eastern areas are closer to the BSBCB, are visible from the Muddy Mountains, and overlap OHV race areas. In general, the

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						finding for this area was that where there were fewer desert tortoise, the threecorner milkvetch were found.
B14-14	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	Excluding this large portion of the application area from further analysis merely because it is less desirable, with no further justification, violates NEPA.	The detailed analysis of why these alternatives were rejected was provided in the Alternatives Report, incorporated into the Draft RMPA/EIS by reference. Refer to Master Response 1: Alternatives for a discussion of the process for consideration of alternatives in compliance with NEPA.
B14-15	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	In particular, it is obvious that avoiding impacts to “Development Area B” which contains both the highest density and total number of desert tortoises within the surveyed portions of the application area, by shifting the project footprint out of this area would have significant benefits in terms of avoiding impacts to an estimated 149 adult desert tortoises. See DEIS at 3-81 (Table 3.8-1). The total failure to consider such an alternative violates NEPA.	As summarized in Master Response 1: Alternatives , and Response to Comment B14-13, the alternatives were developed to balance impacts to various resources, one of which was desert tortoise. Master Response 1: Alternatives provides additional information on the alternative evaluation process, including a discussion of the alternatives considered, including other areas of the 44,000-acre (17,806-hectare) application area and off-site options.
B14-16	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	c. The Applicant’s Assertions Regarding the Economic Infeasibility of the “Mowing” Alternatives Show that the Reasons for Eliminating Other Alternatives from Review, While Applying Detailed Review Only to the Mowing Alternatives Are Arbitrary and Capricious The Applicant’s Alternatives Report, which the DEIS incorporates by reference, contains a letter from the applicant to BLM asserting not only that “mowing” alternatives would have unknown effects on desert tortoise, but that the mowing alternatives involving “mowing and reintroduction of significant portions of the Gemini Solar site (fifty percent or more), would render the project uneconomic and not viable.” Appendix C (October 4, 2018 Letter from Arevia Power to BLM). Arevia argues that the additional cost of implementing the full mowing alternative, which it calculates to be \$1.00 /MW-hour, would render the project uncompetitive and prevent it from obtaining a power purchase agreement (PPA) given that the pricing for a 25 year PPA was likely to be \$23.76 /MW-hour. Id. Thus, based on the applicant’s contentions, which appear to be undisputed by BLM in the DEIS, the only two alternatives that the DEIS considers in detail are not economically feasible.	Refer to Master Response 1: Alternatives for a discussion of the process for consideration of alternatives in compliance with NEPA. Other alternatives such as rooftop solar/distributed generation, or even development in other areas of the 44,000-acre (17,806-acre) application area were not rejected by economics. Many of these alternatives were not feasible alternatives to the Proposed Action. The alternatives considered were not determined and driven by the Applicant, but were determined by the BLM through a review of the environmental constraints, scoping, extensive cooperating agency consultations, and legal requirements. The mowing alternatives were determined feasible by the BLM. Refer to the footnote on page 2-7 of the Alternatives Report, incorporated by reference into the Draft RMPA/EIS, which states, "Economic feasibility does not cover speculation about an Applicant’s costs or profit. It refers to whether the implementation of the alternative is likely given past and current practice and technology."
B14-17	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	In light of the absence of detailed consideration for any other alternatives, this violates NEPA.	Refer to Master Response 1: Alternatives for a discussion of the process for consideration of alternatives in compliance with NEPA.
B14-18	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	Moreover, BLM’s own rules indicate that the lack of financial capability to actually implement a project is a reason for denying the application. 43 C.F.R. § 2804.26(a). The applicant’s assertions in the letter described above indicate its position that it would lack the financial capability to execute either of the mowing alternatives. If the applicant cannot show that it would be financially capable of undertaking the alternatives, and the record does not contain any support to show financial capability to implement the alternatives, how could BLM rationally approve an authorization for a project reflecting either of those alternatives?	The financial capabilities of the Applicant are considered by the BLM but are outside the scope of the NEPA analysis.
B14-19	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	Further, the fact that the DEIS provides detailed analysis of two alternatives that are not economically feasible per the applicant’s own statements, and provides no countervailing analysis to explain why they are in fact economically feasible, renders the DEIS’ rejection of other alternatives on the grounds that they are not economically feasible arbitrary and capricious. See, e.g., DEIS at Table 2.5-1 (rejected private lands alternatives as “too expensive”).	Refer to Response to Comment B14-16 regarding "economic feasibility" considerations under NEPA.
B14-20	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	d. The DEIS Fails to Consider Alternatives that Would Defer Construction Pending Demonstration of the Effectiveness of Mowing Alternatives The DEIS repeatedly concedes that the effectiveness of the mowing alternatives are unknown, and yet fails to evaluate any alternative, or modification thereto, that would contend with that uncertainty. Obvious alternatives not addressed in the DEIS are alternatives that would defer authorization for construction at the project site until after the mowing approach has been evaluated scientifically via a	Refer to Master Response 2: Mojave Desert Tortoise for a discussion regarding Scientific Study with unknown impacts, but potential for reduced severity if desert tortoise successfully reoccupy mowed areas. Impacts are appropriately addressed per the requirements of NEPA. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise, including any adaptive

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					properly designed experimental scale version of the mowing alternative and demonstrated to be effective at significantly reducing impacts to desert tortoises.	management to address if methodologies are unsuccessful, as USFWS deems appropriate.
B14-21	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	In his assessment of the DEIS, Dr. Todd outlines how an experiment involving a 500 acre site could be used to generate information that would allow for a meaningful scientific evaluation of the effectiveness of the mowing alternative in reducing harmful impacts to the desert tortoise. See Todd Report at 5–6. BLM should consider an alternative that would allow only 500 acres to be developed via the mowing method for the purposes of such an experiment, and which would defer a decision on whether any further development can occur until after sufficient data is developed to evaluate the effectiveness of the mowing method with regard to reducing adverse impacts to desert tortoises. Further, given that an experiment scaled at 500 acres could provide meaningful data to evaluate applying the mowing method at larger scales, it would be irrational to apply the untested mowing method on the scales proposed in the DEIS on the ground that it will provide data to inform future actions.	Refer to Response to Comment B14-75, which addresses Dr. Todd's recommendation to develop a 500-acre (202-hectare) experimental site.
B14-22	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	e. The DEIS Should Consider Alternatives that Strategically Preserve Extensive Areas of Large Creosote As outlined in Dr. Todd’s assessment, the preservation of strategically placed areas of undisturbed large creosote could make it more likely that the mowing alternatives would meaningfully reduce the impacts to desert tortoise. See Todd Report at 3–4, 6. BLM should consider in detail and evaluate the effectiveness of an alternative that would rearrange the footprint of the mowing alternatives to distribute such undisturbed areas of large creosote in a manner that would optimize the overlap with desert tortoise home ranges.	Refer to Response to Comment B14-69 with a direct response to Dr. Todd's recommendations regarding stands of large creosote as a mitigation or alternative.
B14-23	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	f. The DEIS Should Consider Additional Measures to Reduce the Harmfulness of the Proposal and Alternatives As outlined in Dr. Todd’s assessment, the DEIS should also evaluate modifications that could make the proposal and alternatives less harmful. Such modifications include: • Relocating the traditionally constructed portion of the Hybrid Alternative to reduce the pinch-point to east-west connectivity. See Todd Report at 5. • Requiring shading/sheltering structures along fencing to reduce tortoise mortality associated with pacing behavior. See Todd Report at 4. Notably, while these modifications could possibly reduce the total harm to desert tortoises, it is by no means indicated that the harm would be reduced to an extent that either makes the presented alternatives meaningfully different, or makes the adverse impacts of the project on desert tortoise insubstantial. Thus, despite application of these measures, substantial adverse impacts would remain.	Refer to Response to Comment B14-73, which addresses Dr. Todd's recommendations regarding east-west connectivity in the Hybrid Alternative. Refer to Response to Comment B14-71, which addresses Dr. Todd's recommendations regarding shading/sheltering. Shade structures will be required along the fencelines, as stated in the BA. The Draft RMPA/EIS discloses the potential for adverse effects, even with the mowing alternatives, consistent with the requirements of NEPA. Project size reduction could still occur in the ROD.
B14-24	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	B. The DEIS Fails to Disclose the Impacts to Desert Tortoise Adequately 1. The DEIS Fails to Adequately Disclose the Impacts of Mowing During the Operations Phase on Desert Tortoises Based on the information presented in other sections of the DEIS, it appears that the additional mowing that will occur routinely during the operations phase of the project will result in additional undisclosed take of desert tortoises that is not analyzed or described properly in the DEIS. With regard to the mowing alternatives, the DEIS states that the tracked vehicles used during the initial construction to mow the site16 and install the PV arrays will crush vegetation. See DEIS at 2-8 (“Mowing and panel construction would occur using skid steer vehicles or other tracked vehicles...One vehicle can likely access two solar array rows at a time so approximately 8 feet (2.4 meters) of vegetation would be crushed every 40 feet (12 meters) in a worst-case scenario in the mowed areas.”). With regard to the operations and maintenance phase for the mowing alternatives, the DEIS states: The solar field would need to have vegetation periodically mowed or trimmed to a height of 18 to 24 inches. Vegetation under the solar arrays would be cut or trimmed with motorized equipment during the winter or by hand during panel cleaning to a height that allows the vegetation to maintain its habitat function for desert tortoise and to maintain hydrology patterns on the site while not impacting the functionality of the solar panels. It is anticipated that trimming would occur every few years but not annually and would not be performed all at once (that is, a few portions of the site would be mowed each year). Each area would not likely need mowing more than once every 5 or more years.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized. Vegetation under the solar arrays would be cut or trimmed by hand during operations and maintenance and not mowed. Clarifications have been made in the Final RMPA/EIS. Motorized mowing equipment would not be used once tortoise are introduced back into the solar facility. Mowing and subsequent trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowing and initial construction of the solar arrays would result in some crushing of vegetation from tracked vehicles, as described under Master Response 4:Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities . The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS. The crushed vegetation is expected to recover over a number of years, based on evidence from other Mojave Desert solar facilities where vegetation was crushed and allowed to regrow (page 3-73 of the Draft RMPA/EIS).

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					DEIS at 2-9 (emphasis added). The DEIS does not appear to specify what motorized equipment would be used to accomplish the mowing during the operations phase. The Alternatives Report presents a tracked vehicle as “Typical Mowing Equipment.” See Alternatives Report at 2-5 (Figure 4). To the extent that tracked vehicles similar to those used during the construction phase will be used for the mowing, it seemingly would be the case that vegetation will also be crushed during the operations-phase mowing at the specified amount of 8 feet per every 40 feet along the mowed path.	
B14-25	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	The DEIS states that only part of the site would be mowed in any given year, and that a given area will be mowed once every 5 years. DEIS at 2-9. For any area that is subject to mowing in a given year, the proportion of vegetation crushed would be 20% of that area (8 feet crushed/every 40feet mowed x length mowed x width mowed = 0.20 x area mowed). ¹⁷ Assuming desert tortoises have been returned to the area, this means that 20% of the mowed area would be a zone where desert tortoises could be crushed during operational mowing. If just 20% of the total site was mowed in a given year, that would mean that 20% x 20% = 4% of the desert tortoises would be subject to crushing by the vehicles used for operations phase mowing. If 200 adult tortoises were returned to the site, that would mean an annual mortality of 8 adult tortoises a year from crushing alone.	Refer to Response to Comment B14-24.
B14-26	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Rather than analyze and disclose this impact, the DEIS obscures it with the vague statements such as: “Ongoing O&M of the solar facility would result in some additional impacts on desert tortoises from mowing and other maintenance activities.” DEIS at 3-89 (discussing Hybrid Mowing Alternative).	Refer to Response to Comment B14-24.
B14-27	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	The failure of the DEIS to explicitly discuss and evaluate this additional source of mortality, and the failure to evaluate the resulting impact on the tortoise population, both at and surrounding the project site, violate NEPA.	Refer to Response to Comment B14-24.
B14-28	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	2. The DEIS May Underestimate Tortoise Densities As explained by Dr. Todd, there are two problems with the density estimates developed by the applicant based on site-specific surveys that may result in the underestimation of the number and density of tortoises that will be affected by the project. The first problem is that surveys were conducted in the fall, when tortoises are less active and less likely to be observed and counted, rather than in the spring; this may result in underestimating the number and density of tortoises. See Todd Report at 1–2.	Refer to Response to Comment B14-62 for a response to Dr. Todd's assessment regarding concerns that density estimates were underestimated and timing of surveys.
B14-29	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	The second problem is that with respect to surveys of unequal transects, the estimates appear to have been calculated using the wrong FWS reference data. See id.	Refer to Response to Comment B14-62 to Dr. Todd's observation regarding the USFWS reference data.
B14-30	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	BLM, in consultation with FWS, should re-evaluate the estimates to address and account for these two issues, and should evaluate what effect they have on the estimates of the density of tortoises within the proposed footprints, and the total number of tortoises that will be harmed by the project.	Refer to Response to Comment B14-62 to Dr. Todd's observation regarding the USFWS reference data and survey methodology.
B14-31	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	3. The DEIS Fails to Disclose the Fate of Desert Tortoises Under the Proposed Action As Dr. Todd identifies in his report, the DEIS fails to provide a clear explanation as to what will actually happen to the desert tortoises that would need to be translocated under the proposed action. See Todd Report at 1. The failure to provide a transparent explanation as to the fate of these tortoises prevents the public from fully assessing the proposal and comparing it to the action alternatives.	Refer to Master Response 2: Mojave Desert Tortoise (under Take of Desert Tortoise) for an explanation of would happen to the 215 adult tortoises and approximately 900 or more juveniles under the Proposed Action. The reader is afforded the appropriate detail of the outcome to compare alternatives, even if the means by which the mortality take would occur is not known or specified.
B14-32	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	4. The DEIS Fails to Disclose the Full Value of the Habitat Lost Due to the Project The DEIS fails to provide an adequate disclosure of the value of the habitat that will be affected by the proposal and alternatives. For example, the DEIS fails to disclose that the project area appears to be in a priority habitat linkage identified by the U.S. Fish and Wildlife Service (FWS or “the Service”). The Service identified priority 1 and 2 connectivity habitat for tortoise habitat in “variance lands” that BLM decided not to categorically exclude for development. ¹⁸ The project here appears to be in an area identified by FWS as both “priority 1” and “priority 2” habitat. The “priority 1” areas are areas that FWS	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts, as well as the role of USFWS during the ongoing Section 7 consultation for this project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM have reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity

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					identified as "habitat linkages between existing conservation areas that have the best chance of sustaining connectivity for desert tortoise populations."19 For that reason, the Service stated that those areas "represent priority areas for conservation of desert tortoise population connectivity."20 Priority 2 areas represent "blocks of habitat with the greatest potential to support populations of desert tortoises"... and were identified based on being "contiguous, high-value desert tortoise habitat."21 With regard to the priority 1 and 2 areas, FWS found: the combination of linkages and existing desert tortoise conservation areas represents the basis for a conservation network for the Mojave desert tortoise. The map illustrates the intersection of these lands and variance areas identified in the preferred alternative of the Final Solar PEIS. The value of these lands with respect to recovery and persistence of the desert tortoise elevates the review and evaluation needed for solar energy projects proposed on these lands to assist in reducing impacts to desert tortoise. See Explanation of Map of FWS-Identified Priority Desert Tortoise Connectivity Areas, available at http://solareis.anl.gov/documents/fpeis/maps/FWS_Connectivity_Explanation.pdf . Regardless of whether the Western Solar Plan ROD applies to this decision, the scientific conclusions of FWS about what habitat in the region has the best chance of sustaining connectivity and supporting populations are facts that cannot rationally be ignored by BLM, and that should be fully disclosed in the DEIS. The site-specific tortoise surveys conducted by the applicant, showing high densities of tortoises, serve to confirm or ground-truth the Service's inclusion of this area in its identification of important linkage and habitat areas.	in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS. Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.
B14-33	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Further, recent habitat suitability modeling prepared by NatureServe and provided to BLM by Defenders of Wildlife indicates that the habitat suitability for desert tortoise of units in the proposed project area is comparable to, and higher than, the suitability of nearby ACECs designated for the conservation of desert tortoise in the 1998 Las Vegas RMP, such as the Coyote Springs ACEC and the Piute-Eldorado ACEC. While the DEIS acknowledges that the project area is "high quality" habitat for desert tortoise, DEIS at 3-80, it does not disclose that the quality is so high that it is actually comparable to that in areas that BLM identified for special protection.	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) for information on the ACECs and CHUs and the high-quality habitat in the Project area. The Biological Assessment for the Project provides considerable supplemental information on desert tortoise habitat, connectivity, corridors, ACECs, CHUs, and linkages that expands on the information provided in the Draft RMPA/EIS. The Draft RMPA/EIS also adequately disclosed the Project area has high densities in relation to the ACECs, CHUs, and the Recovery Unit as a whole on page 3-80, where it states, "The Project site generally supports high-quality habitat for the species, and, of the studies completed, this region has the highest known densities of desert tortoise in the Northeastern Mojave Recovery Unit. The Moapa Solar Project (located approximately 1.7 miles [2.8 kilometers]) north of the Project site) had a higher average density of 31.9 adult tortoises per square mile (12.4 per square kilometer). Playa Solar (located approximately 5.8 miles [9.3 kilometers]) southwest of the Project site) had a slightly lower average density of 13.1 adult tortoises per square mile (5.1 per square kilometer). The average density in the desert tortoise CHUs within the Northeastern Mojave Recovery Unit was 10.9 adult tortoises per square mile (4.4 per square kilometer) in 2014 (USFWS 2014)."
B14-34	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	The failure to fully disclose the value of the habitat that will be destroyed by the project in terms of its importance for connectivity, sustaining populations, importance for species conservation, and suitability comparable to designated conservation areas violates NEPA.	Refer to Response to Comment B14-33. The high-quality of the habitat in the Project area is adequately disclosed. Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise connectivity and the assessment of impacts. Impacts were identified as adverse to varying degrees of severity across the Proposed Action and alternatives. The NEPA analysis will be used to inform the BLM's decision whether or not to approve or deny the ROW application.
B14-35	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	C. The Cumulative Impact Analysis is Inadequate 1. The Cumulative Impact Analysis Fails to Consider Impairment to Connectivity The DEIS concedes that the adverse cumulative impacts to desert tortoise from the proposal and other	The cumulative effects of other projects and the Proposed Action are assessed as substantial and adverse. The cumulative impacts from connectivity were briefly addressed in the statement on page 3-84 of the

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					reasonably foreseeable development will be “substantial,” DEIS at 3-85, but fails to actually provide any analysis of what the cumulative effect will be on the connectivity of tortoise populations.	Draft RMPA/EIS, “Facility installation for the cumulative projects would involve vegetation removal, resulting in the loss and fragmentation of desert tortoise habitat.” Fragmentation is directly related to connectivity and hence, connectivity is accounted for in the cumulative analysis. Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) for additional explanations of cumulative connectivity impacts and that some clarifying language has been added to the Final RMPA/EIS.
B14-36	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	With regard to the two action alternatives, the DEIS indicates that adverse cumulative impacts will be less than for the proposal, but that conclusion turns on the assumption that reoccupation will be successful, which the DEIS itself concedes is an unknown, and is an assumption unsupported by scientific evidence. See DEIS at 3-88 (The All Mowing Alternative would make a similar contribution to cumulative impacts as the Proposed Action; however, since desert tortoise would be allowed to reoccupy the site after construction, the Project’s contribution to the overall cumulative effects from total removal of available acreage for desert tortoise occupation would be less than that of the Proposed Action.”) (emphasis added); id. (“However, it is not known whether reoccupation would be successful.”); id. at 3-90 (“The Hybrid Alternative would make a similar contribution to cumulative impacts as the Proposed Action; however, since desert tortoise would be allowed to reoccupy 65 percent of the site after construction, the Project’s contribution to the overall cumulative effects from total removal of available acreage for desert tortoise occupation would be less than that of the Proposed Action.”); id. (“However, it is not known whether reoccupation would be successful.”).22 And again, the discussion of cumulative impacts for the alternatives does not address impacts to connectivity. See id. at 3-88, 3-90.	Refer to Master Response 2: Mojave Desert Tortoise for a discussion of the mowing alternatives and disclosure of associated impacts, as well as the reduced potential severity of desert tortoise impacts compared to the Proposed Action. Successful reoccupation and reduced impacts to tortoise connectivity could occur under the mowing alternatives, whereas neither would occur under the Proposed Action. Refer to Response to Comment B14-35 regarding the consideration of connectivity in the cumulative analysis. The cumulative impacts on tortoise from other Projects is discussed as "similar cumulative loss of desert tortoise habitat from solar projects and other large-scale projects in the region as described for the Proposed Action" (pages 3-88 and 3-90). As stated in the Response to Comment B14-35, the Proposed Action identified habitat fragmentation as an impact. Refer to Response to Comment B14-38 for additional explanations of cumulative connectivity impacts. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise.
B14-37	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Aside from a paragraph about water use impacts, the only “analysis” of cumulative impacts is essentially a summary of the total area of habitat likely to be affected, determined by adding together the acreage of habitat impacted by the other complete and foreseeable projects within a 50 mile radius and within the Northeastern Mojave Recovery Unit, and the percentage of total habitat that constitutes. See DEIS 3-85. The DEIS does not provide analysis of how connectivity would be impaired by the cumulative habitat loss. See id.	Refer to Responses to Comments B14-35, B14-36, and B14-38 regarding the consideration of connectivity in the cumulative analysis. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise.
B14-38	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	The DEIS neither discusses the cumulative impact on connectivity, nor does it present the minimal spatial analysis obviously necessary to evaluate the cumulative impact, for example, by mapping all the past, present, and foreseeable development footprints onto a map that shows the habitat that FWS has identified as important for connectivity to ascertain how the “pinch points” created by this project will combine with other development to constrict connectivity between tortoise populations.	Refer to Responses to Comments B14-35 and B14-36 regarding the consideration of connectivity in the cumulative analysis. The impact is acknowledged as adverse based on the contribution that the Proposed Action or the alternatives could have to an overall impact. Assessing the individual impacts to connectivity of each of the other projects, without regard for the Proposed Action's contribution, is beyond the scope of analysis required under NEPA. The detailed analysis of the Project's impact on connectivity includes a spatial component and discusses the connectivity (or lack thereof) to the ACECs and CHUs in the Recovery Unit. Due to the size of the Project and ability for tortoises currently to move east and west across the site and to some degree, north and south, connectivity impacts are identified as a significant impact. While the cumulative impacts related to "habitat fragmentation" were determined to be cumulatively significant, none of the other large-scale projects that could affect connectivity, identified in the cumulative list of projects, are located between the natural and anthropogenic barriers to this Project, including the I-15 to the West, the Muddy River to the North, and the Dry Lake and Muddy Mountain ranges to the east and south. There are

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						no other currently proposed projects that could affect gene flow of the population on the Project site. Some language has been added to the Final RMPA/EIS to clarify this point and the types of effects on desert tortoise. If reoccupation is unsuccessful for the action alternatives, the effects on desert tortoise including cumulative connectivity would be nearly the same as the Proposed Action.
B14-39	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	In failing to assess the location and distribution of all the foreseeable habitat loss with regard to the habitat vital for connectivity, the DEIS has ignored a crucial consideration of evident importance to the decision, in violation of NEPA.	Refer to Response to Comment B14-38 regarding the consideration of connectivity in the cumulative analysis. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise.
B14-40 and B14-41	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Further, the DEIS fails to consider the impact of the cumulative habitat loss in light of climate change. As FWS explained in a recent Biological Opinion: Climate change may exacerbate insufficient connectivity among tortoise populations, given that future temperatures generally are expected to rise; the effects of climate change on rainfall are less predictable at this time (Christensen et al. 2007). A future rise in temperature would increase environmental variability. Because of its habitat requirements and life history traits, the desert tortoise is considered to be highly vulnerable to the effects of climate change. The combination of increased environmental variability and decreased genetic variation in desert tortoise populations would lead to a higher likelihood of extirpation in linkage areas due to stochastic factors and human-related activities. Thus, landscape-scale redundancy in core habitat-linkage reserve design is an important principle in conservation strategies for widely distributed species like the desert tortoise (Service 1994, 2011). U.S. FWS, Formal Consultation under Section 7 of the Endangered Species Act for Effects to Mojave Desert Tortoise for Ice Age Fossils State Park, (Jan. 29, 2019), at 24 (emphasis added). ²³ This makes clear that an adequate analysis of the cumulative impacts must consider whether the cumulative anticipated habitat loss will undermine the redundancy in linkage areas that is necessary to conserve the desert tortoise in the face of climate change. Merely saying that the cumulative impacts of habitat loss will be “substantial” does not provide the spatial analysis needed to actually evaluate whether development at this particular location, taken in combination with locations of other foreseeable development, will eliminate the required back-up connectivity, and thereby take away the ability of the species to survive and recover in the face of the climate crisis. In other words, the impact to connectivity has to be evaluated not only with respect to how it will constrain connections between populations, but with regard to whether it will eliminate the reserve of multiple areas of connection that is necessary in light of changes that will result from climate change over the coming decades. Again, the failure to consider this obviously important consideration violates NEPA.	Refer to Response to Comment B14-38 for additional information on the cumulative analysis for connectivity. It is understood that the tortoise is particularly vulnerable to climate change. While not specifically called out, habitat loss from climate change is incorporated into the overall understanding and consideration of the status of the species. It is not possible to identify exactly where habitat changes from climate change will occur in this region. Any large areas of habitat are considered important. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise.
B14-42	9/4/2019	Schoenhut, Karimah	Sierra Club	BLM Management	IV. Approval of the Right of Way Would Not Comport with the Federal Land Policy and Management Act (FLPMA) 1. Approval of the Proposal or Either “Mowing” Alternative Would Not Comport with the 1998 Las Vegas RMP and Is Not in the Public Interest As discussed above, the Service has identified the project area as being part of one of the “habitat linkages between existing conservation areas that have the best chance of sustaining connectivity for desert tortoise populations.” ²⁴ The site-specific tortoise survey data provided by the applicant, showing a high density of tortoises, confirms or “ground-truths” the importance of the habitat at the site. The information in the DEIS also indicates that the project will create a pinch-point that impairs that connectivity resulting in “increased localized densities, reduced gene pool flow, and increased stressors that could affect survival of tortoises,” DEIS at 3-83 to 3-84, and cannot rationally support a conclusion that the action alternatives will avoid that result. Consequently, the proposal and action alternatives here do not comport with the 1998 Las Vegas RMPs specific objective to “Maintain functional corridors of habitat between areas of critical environmental concern to increase the chance of long-term persistence of desert tortoise populations within the recovery unit.” (Objective AC-1). Nor with the objective of the plan to: “Manage desert tortoise habitat to achieve the recovery criteria defined in the Tortoise Recovery Plan (USFWS 1994) and ultimately to achieve delisting of the desert tortoise.” (Objective SS-3).	Refer to Master Response 2: Mojave Desert Tortoise for a discussion of priority habitat linkages and connectivity, consultation with USFWS regarding the specific impacts of this Project and consistency with the Desert Tortoise Recovery Plan, the USFWS's need to make a conclusion based on the Hybrid Alternative, and the explanation as to why this Project is not considered a linkage between ACECs for desert tortoise. Refer to Master Response 1: Alternatives for a discussion of the mowing alternatives and disclosure of associated impacts, as well as the reduced potential severity of desert tortoise impacts compared to the Proposed Action. Successful reoccupation and reduced impacts to tortoise connectivity could occur under the mowing alternatives, whereas neither would occur under the Proposed Action.

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B14-43	9/4/2019	Schoenhut, Karimah	Sierra Club	BLM Management	Nor does approval of the project or any action alternative align with overarching statement of the plan that: “The BLM is committed to provide the desert tortoise with the highest possible quality of habitat with limitations on the interference by man.” The Service has identified the project areas as within one of the areas “with the greatest potential to support populations of desert tortoises.” The tortoise density surveys reported in the DEIS, as well as recent habitat suitability modeling by NatureServe indicate that the site is of such high value that it has higher suitability than two ACECs designated for desert tortoise protection. Allowing the destruction of habitat identified as having the greatest potential to support populations does not comport with providing tortoises with the highest possible quality of habitat.	Refer to Master Response 2: Mojave Desert Tortoise for a discussion of the ACECs, the high-quality habitat in the Project area, consultation with the USFWS regarding the specific impacts of this Project, and the consistency of the Project with the Desert Tortoise Recovery Plan.
B14-44	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	The DEIS concedes that the proposed action would result in substantial take and substantial habitat loss for desert tortoise, even after the imposition of mitigation measures. DEIS at 3-82 (“The take of all adult and juvenile tortoises on the Project site, in addition to the loss of habitat, would also result in a substantial adverse impact on the species and the local population. MM WILD-1 requires that the footprint of the solar facility be reduced to the minimum size needed; however, substantial loss of habitat and a substantial take of tortoises would still occur.”). As described above, due to the unknowns as to whether the mowing alternatives will actually result in successful or failed reoccupation, the reintroduced tortoises must also be deemed taken, and the habitat lost. Thus, the only two action alternatives considered in the DEIS will also result in substantial take and substantial habitat loss.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding unknown impacts, but potential for reduced severity of effects if successful reoccupation by desert tortoises occurs. Impacts are appropriately addressed per the requirements of NEPA. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise, including any adaptive management to address if methodologies are unsuccessful, as USFWS deems appropriate. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise.
B14-45	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	The DEIS also concedes that the proposed action will have adverse effects on desert tortoise survival by impairing connectivity. The DEIS states: The construction and operation of the Proposed Action would result in local habitat fragmentation for desert tortoises in the surrounding areas. Habitat fragmentation would significantly change the dispersal opportunities for desert tortoises moving throughout the area, as the Project would eliminate dispersal through approximately 7,097 acres (2,872 hectares or 28 square kilometers), or approximately 15 percent of the suitable habitat in the immediate area. The site would present a new barrier to tortoises (i.e., tortoises could move around to the other side of the site, but not through it). In particular, the movement of tortoises from east to west to the North Muddy Mountains would be constrained by the Proposed Action. The fencing of the facility would form an approximately 6-milelong (9.6-kilometer-long) barrier to east-west migration and an approximately 3-mile-wide (4.8-kilometer-wide) barrier to north-south migration. The southern end of development area D is approximately 1 mile (1.6 kilometers) from the Muddy Mountains (since tortoise habitat is limited to the valley and not the mountains) and would create a pinch-point for tortoise migration in a northeast/southwest direction past that point. Reduced connectivity through the larger area would result in increased localized densities, reduced gene pool flow, and increased stressors that could affect survival of tortoises. These effects would be considered adverse.” DEIS at 3-83 to 3-84. As detailed above, the DEIS concedes that the Hybrid Alternative will still result in a pinch point impairing connectivity.	The Hybrid Alternative would also have a pinch-point, but it would be smaller than for the Proposed Action. As stated on page 3-89 of the Draft RMPA/EIS: "The southern end of the fenced area for traditional development is approximately 2.5 miles (4 kilometers) from the Muddy Mountains and would create a pinch-point for tortoise migration past that point moving northeast towards the North Muddy Mountains or moving south. Some reduced gene flow could occur based on tortoise movement restrictions, as could localized increases in densities and stressors that could impact tortoise health and survival. The pinch point would be wider than the 1 mile (1.6 kilometers) created under the Proposed Action." While impacts could still occur, they are potentially reduced as compared with the Proposed Action, provided successful reoccupation of mowed areas by desert tortoise under the Hybrid Alternative. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise.
B14-46	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Further, in light of its concessions that it is totally unknown whether desert tortoises will successfully reoccupy the habitat subject to “mowing,” it would be irrational for BLM to conclude that connectivity will be preserved for the mowed areas under the mowing alternatives. If it is unknown whether desert tortoises can persist in the long term in the “mowed” habitat, it is irrational to assume that individual desert tortoises will traverse thousands of acres of unsuitable habitat, and thereby preserve connections between populations in the areas where they can persist. If desert tortoises cannot survive in the mowed habitat for more than the short term, and cannot breed, then that habitat will not actually provide population connectivity. Again, as Dr. Todd explains, it is uncertain to what extent the mowed areas will actually be permeable and usable to desert tortoise, and there is reason to think the habitat modification from mowing will affect permeability and use, making it unclear whether the mowing alternatives will preserve connectivity to a meaningful extent. See Todd Report at 4–5. Thus, again, all of the action alternatives here will impair connectivity.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing alternatives and disclosure of associated impacts, as well as the reduced potential severity of desert tortoise impacts compared to the Proposed Action. Provided successful reoccupation occurs impacts to desert tortoise connectivity could be reduced under the mowing alternatives, whereas it would not occur under the Proposed Action. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise. Refer to Responses to Comments B14-71 through B14-73 for a response to Dr. Todd's analysis of fencing impacts on connectivity.
B14-47	9/4/2019	Schoenhut, Karimah	Sierra Club	BLM Management	For the reasons above, approval of the proposal or the action alternatives is not consistent with the 1998 Las Vegas RMP. The information presented in the DEIS makes plain that this location is not appropriate for a project with the footprints under either the proposal or alternatives due to the high density of	Refer to Master Response 2: Mojave Desert Tortoise for a discussion of the ACECs, the high-quality habitat in the Project area, consultation with USFWS regarding the specific impacts of this Project, the consistency of

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					tortoises, high quality of the habitat, impairment of connectivity that would result, and unknown effects of the “mowing” approach.	the Project with the Tortoise Recovery Plan, and the USFWS’s need to make a conclusion. Refer to Master Response 1: Alternatives for a discussion of the mowing alternatives and disclosure of associated impacts, as well as the potential for the alternatives to reduce severity of desert tortoise impacts as compared to the Proposed Action. Successful reoccupation and reduced impacts to tortoise connectivity could occur under the mowing alternatives, whereas neither would occur under the Proposed Action. The consistency of the Project with the 1998 Las Vegas RMP will be determined at the ROD.
B14-48	9/4/2019	Schoenhut, Karimah	Sierra Club	BLM Management	Further, for these reasons, the approval of the proposal or action alternatives would not be in the public interest. The site specific information provided by the applicant has made clear that the use of the land here for wildlife conservation is of high importance; that the impact on that use would be devastated by the proposed action; and that there is insufficient information to assert that the alternatives will not have a similarly devastating impact. Given the priority given to desert tortoise protection under the 1998 Las Vegas RMP, the balance of interests here clearly requires protection of the desert tortoise and selection of the no action alternative.	The commenter's preference for the No Action Alternative is noted. Refer to Master Response 2: Mojave Desert Tortoise for a discussion of the ACECs, the high-quality habitat in the Project area, consultation with USFWS regarding the specific impacts of this Project, the consistency of the Project with the Tortoise Recovery Plan, and the USFWS's need to make a conclusion. Refer to Master Response 1: Alternatives for a discussion of the mowing alternatives and disclosure of associated impacts, as well as the potential for the alternatives to reduce severity of desert tortoise impacts as compared to the Proposed Action. Successful reoccupation and reduced impacts to tortoise connectivity could occur under the mowing alternatives, whereas neither would occur under the Proposed Action. The NEPA analysis will be used to inform the BLM's decision whether or not to approve or deny the ROW application.
B14-49	9/4/2019	Schoenhut, Karimah	Sierra Club	BLM Management	2. Approval of the Proposal or Either “Mowing” Alternative Would Not Comport with BLM’s Duty to Protect Public Lands Against Undue or Unnecessary Degradation Regardless of whether it violates NEPA, BLM’s failure to engage in any detailed analysis of options that would avoid impacts to the desert tortoise by reducing the footprint of development generally, reducing the footprint of development within the application areas of highest tortoise density (such as area B), or shifting the footprint out of those areas, violates BLM’s obligation to protect the public lands against undue or unnecessary degradation. Written in the disjunctive, BLM must prevent degradation that is “unnecessary” and degradation that is “undue.” Mineral Policy Ctr. v. Norton, 292 F.Supp.2d 30, 41-43 (D. D.C. 2003). “Application of this standard is necessarily context-specific; the words ‘unnecessary’ and ‘undue’ are modifiers requiring nouns to give them meaning, and by the plain terms of the statute, that noun in each case must be whatever actions are causing ‘degradation.’ ” Theodore Roosevelt Conservation P’ship v. Salazar, 661 F.3d 66, 76 (D.C. Cir. 2011) (citing Utah v. Andrus, 486 F.Supp. 995, 1005 n.13 (D. Utah 1979) (defining “unnecessary” in the mining context as “that which is not necessary for mining” and “undue” as “that which is excessive, improper, immoderate or unwarranted.”)).	Refer to Master Response 1: Alternatives for a discussion of the mowing alternatives and disclosure of associated impacts, as well as the potential for the alternatives to reduce severity of desert tortoise impacts as compared to the Proposed Action. Successful reoccupation and reduced impacts to tortoise connectivity could occur under the mowing alternatives, whereas neither would occur under the Proposed Action. The NEPA analysis will be used to inform the BLM's decision whether or not to approve or deny the ROW application.
B14-50	9/4/2019	Schoenhut, Karimah	Sierra Club	BLM Management	Unlike contexts such as hard-rock mining or development on already-issued leases where BLM may have more limited discretion remaining at the development/permitting stage to completely prohibit the activity causing degradation, in the present context, BLM has complete discretion to reject the project. Consequently, whether the degradation resulting from that project would be unnecessary or undue must be evaluated with regard to that broad discretion. To approve any of the action alternatives here without a more thorough evaluation of whether the footprint could be reduced or shifted out of the highest density desert tortoise areas violates the requirement to avoid unnecessary or undue degradation.	Refer to Master Response 1: Alternatives for a discussion of the mowing alternatives and disclosure of associated impacts, as well as the potential for the alternatives to reduce severity of desert tortoise impacts as compared to the Proposed Action. Successful reoccupation and reduced impacts to tortoise connectivity could occur under the mowing alternatives, whereas neither would occur under the Proposed Action. The alternatives were developed to balance impacts to various resources, one of which was desert tortoise, which is why some areas where desert tortoise densities were very low were not considered. These areas (development area F, for example) had large populations of a state endangered plant, threecorner milkvetch. The NEPA analysis will be used

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						to inform the BLM's decision whether or not to approve or deny the ROW application.
B14-51	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	But further, because high quality desert tortoise habitat with confirmed thriving desert tortoise populations is a finite resource, and there is no need, from the public perspective, to use these particular lands for solar energy development, destroying that finite resource for energy development results in undue and unnecessary degradation.	The comment is acknowledged. The impacts to desert tortoise are adequately disclosed in the Draft RMPA/EIS and supporting documentation. The NEPA analysis will be used to inform the BLM's decision whether or not to approve or deny the ROW application.
B14-52	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	<p>3. Approval of the Proposal or Either “Mowing” Alternative Without Regard for the Appendix B Factors Would Be Arbitrary & Capricious</p> <p>Even if the directions under the Western Solar Plan ROD do not directly apply to the application because the application is “pending” or “grandfathered,” it would be arbitrary and capricious for BLM to fail to consider, and give sufficient weight to, the factors outlined in the Western Solar Plan with respect to applications in desert tortoise habitat. Those factors were determined based on scientific concerns from FWS about the species. Those factors require the applicant to show, among other things, that (1) “[t]he project can be sited and constructed to allow for adequate connectivity corridors ... that ensure that the project does not isolate or fragment tortoise habitat and populations”; (2) “[t]he proposed site contains low tortoise densities”; (3) [t]he project will result in minimal translocation of adult and sub-adult Tortoises; and (4) the translocation will only be “to acceptable locations.”</p> <p>Here, the applicant cannot satisfy any of those factors, let alone all of them. The site specific data presented in the DEIS shows that the project site contains high densities of desert tortoises. The DEIS also shows that the project will create a pinch-point impairing connectivity, and concedes that it is unknown whether successful reoccupation, on which preserving connectivity depends, will occur under the alternatives. The project will result in the translocation of hundreds of desert tortoises, which obviously is not “minimal.”</p>	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise connectivity and assessment of impacts and the role of USFWS during the ongoing Section 7 consultation for this project. Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS. While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this Project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.</p> <p>Master Response 2: Mojave Desert Tortoise (under Scientific Study) also includes a discussion of the mowing alternatives and disclosure of associated impacts, as well as the reduced potential severity of desert tortoise impacts compared to the Proposed Action. Successful reoccupation and reduced impacts to tortoise connectivity could occur under the mowing alternatives, whereas neither would occur under the Proposed Action.</p> <p>Translocation of hundreds of tortoises would be short distance for most tortoises under the Hybrid and All Mowing Alternatives, following acceptable methodologies under the Desert Tortoise Recovery Plan and following a Desert Tortoise Translocation Plan, available with the Final RMPA/EIS. The Translocation Plan is under review with the USFWS who has authority over impacts to the species. The Biological Opinion is anticipated in early November.</p>
B14-53	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Further, it does not appear that the proposed translocations will be to acceptable locations. The DEIS states that: “The Proposed Action would result in the direct or indirect take of up to all tortoises found on the Project site, since there are no places within the Northeastern Mojave Recovery Unit where the tortoises can be moved.” DEIS at 3-82 (emphasis added); see also DEIS at 3-86 (“Distantly moving desert tortoises (translocating them) to another region of the Northeastern Mojave Recovery Unit has been a last-resort approach on other solar projects in the region and is not an option for this Project. There are no known areas large enough to accept the desert tortoises that meet the USFWS desert tortoise translocation guidance definition of “depleted population.”) (emphasis added). For the Mowing and Hybrid Alternatives, the translocation will be mainly to nearby areas or by reintroduction into the mowed areas. But these areas respectively do not meet FWS requirements in terms of density, and, per the concessions in the DEIS, represent areas where it is unknown whether reoccupation will be successful.	<p>Take is acknowledged for the tortoises under the Proposed Action, as stated in the Response to Comment B14-31. Clarifications have been made in the Final RMPA/EIS that the take, as used to describe effects in the Draft RMPA/EIS, referred to anticipated mortality take or a "loss" for the Proposed Action, as compared with a take for moving and handling under the alternatives. The term "take" has been replaced or augmented with clearer language throughout the Final RMPA/EIS to better describe the differences between the action alternatives and the Proposed Action, as explained in Master Response 2: Mojave Desert Tortoise (under Take of Desert Tortoise).</p> <p>The majority of the tortoises under the All Mowing and Hybrid Alternatives would be allowed to reoccupy the solar field, which is within their home ranges. 34 or 36 adult tortoises (depending on the alternative) will be translocated to an area south of the Project area, as shown in Table 3.8-2 on page 3-86 of the Draft RMPA/EIS. The USFWS approved the Desert Tortoise Translocation Plan, which will allow the distant translocation as well as reintroduction of desert tortoise. The Desert Tortoise Translocation Plan is included as an appendix to the Final RMPA/EIS and provides more information on the methods used for</p>

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						translocation. A Long-Term Monitoring Plan will also be developed and implemented for the Project, as described further in the master response.
B14-54	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Again, in light of these considerations, BLM should not proceed with approval of the proposal, nor with either of the action alternatives. The record here demonstrates that the proposal and alternatives do not comport with obviously relevant environmental criteria, and that approval of the right of way is not in the public interest due to impacts to the desert tortoise.	The comment is acknowledged. The impacts to desert tortoise are adequately disclosed in the Draft RMPA/EIS and supporting documentation. The NEPA analysis will be used to inform the BLM's decision whether or not to approve or deny the ROW application.
B14-55	9/4/2019	Schoenhut, Karimah	Sierra Club	BLM Management	<p>4. BLM Should Clarify Whether the Application Here Is Properly Treated as “Grandfathered” Because Otherwise the Approval Does Not Comport with BLM’s Own Policies for the Review of Applications in Variance Areas</p> <p>The DEIS states: “Solar Partners XI, LLC acquired an existing 44,000-acre right-of way application filed in 2008 by BrightSource Energy, LLC for the APEX Solar Thermal Power Generation Facility.” The Notice of Intent to prepare a DEIS for this project states: “In 2017, Solar Partners XI, LLC filed an application with the BLM requesting authorization to construct, operate, maintain, and decommission a 690-megawatt-per-year photovoltaic (PV) solar electric generating facility and associated generation tie-line and access road facilities. ... The Solar Partners XI, LLC acquired the original 44,000-acre APEX Solar Thermal Power Generation Facility right-of-way application filed in 2008 by BrightSource Energy, LLC.”²⁵ BLM’s LR2000 system records for the 2008 BrightSource application indicate that in 2017 BLM received updated corporate documents showing “the purchase of Solar Partners XI by Arevia Power.” The Updated plan of development submitted to BLM by Solar Partners XI and dated July 9, 2018 states that Solar Partners XI is a wholly owned subsidiary of Valley of Fire LLC. It also states that Valley of Fire LLC purchased Solar Partners XI from BrightSource Energy in 2017, and that Solar Partners was a wholly-owned subsidiary of BrightSource. The plan then states that Arevia Power is the “development manager” for Valley of Fire, LLC. None of this explains how Solar Partners XI “acquired” the application from BrightSource prior to BrightSource selling Solar Partners XI to Valley of Fire LLC.</p> <p>The Wind and Solar Leasing Rule makes clear that applications generally cannot be assigned, 43 C.F.R. § 2807.21 (g), but indicates that transactions within a single corporate family are not considered assignments under that rule, see 43 C.F.R. § 2807.21(b)(1). Nonetheless, with regard to grants and leases passed between a single corporate family, the rule requires that notification of the transaction may be required by BLM, and refers to the requirements of §2807.12(e), which requires specific information about the nature of corporate applicants be provided to BLM during the right of way application process, and § 2807.11, which specifies situations where BLM must be contacted, and includes “[w]hen there is a change affecting your application ... including, but not limited to, changes in... (1) Mailing address; (2) Partners; (3) Financial conditions; or (4) Business or corporate status.” Thus even where there is no assignment, it is necessary to notify BLM of the intra-corporate family transaction. Through what transaction did BrightSource transfer its application to Solar Partners XI? When did that transaction occur? Did BrightSource provide notification to BLM of that intra-corporate family transaction? Why does BLM’s LR2000 record appear to lack any documentation of that notification or transaction? The EIS should clearly explain for the public what the factual basis is for the current application to be treated as grandfathered. BLM should scrutinize the timing of the transfer, the timing of the sale, and the status of Solar Partners XI to determine whether in essence this constitutes an assignment of Bright Source’s application to another corporate entity. If the application cannot properly be treated as “grandfathered,” it should be evaluated in compliance with Western Solar Plan ROD.</p>	<p>Master Response 1: Alternatives (under the Off-Site Alternatives) describes this Solar PEIS's relevancy to the Project.</p> <p>The regulations cited by the commenter apply to authorized ROWs only. The Project is still in the application phase under 43 CFR § 2804. The regulations are silent on assigning or transferring an application. On July 27, 2017 the BLM received updated corporate documents reflecting the purchase of the holding company. This is reflected in BLM’s LR2000 system records. The Solar PEIS ROD states that "Amendments to pending applications would also not be subject to the decisions adopted by this ROD, provided that such amendments... are related to avoiding resource or land use conflicts, adapting the project to third-party-owned infrastructure constraints, or using or designating translocation or mitigation lands." The assignment of the lease and the status of the lease's ownership changes is outside the purview of the NEPA analysis and is a BLM realty concern.</p>
B14-56	9/4/2019	Schoenhut, Karimah	Sierra Club	BLM Management	Furthermore, in addition to the failure to provide an explanation of how Solar Energy Partners XI “acquired” the 2008 application of BrightSource to show that this is not an improper attempt to “assign” BrightSource’s application to another entity, the grandfathering here is questionable for other reasons. First, although the outer boundary of the application area may not have changed, the proposed total acreage for the right of way that BrightSource applied for was 2000 acres according to BLM’s LR2000 record. The current proposal more than triples the total area of the requested right of way. Moreover, comparing BrightSource’s application to those of other “grandfathered” projects pending in the same region shows that the difference between the application area and the proposed right of way area is much	Refer to Response to Comment B14-55. The Project has been determined to be "grandfathered," as the ROW application pre-dates the Solar PEIS (as described further in Master Response 1: Alternatives , under the Off-Site Alternatives). The assignment of the lease and the status of the lease's ownership changes is outside the purview of the NEPA analysis and is a BLM realty concern. The footprint of the proposed solar facility under the 2008 SF-299 was 12,000 acres (4,856 hectares), not 2,000 acres (809 hectares), as stated on page 4-6 of the Alternatives Report.

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					more extreme than for other projects. In light of the significant change in the areal boundaries for the right of way itself, BLM should not treat the project as grandfathered.	
B14-57	9/4/2019	Schoenhut, Karimah	Sierra Club	BLM Management	Moreover, the expansion of the inner boundaries for the project cannot be justified based on any of the reasons articulated in the Western Solar Plan ROD, as the project plainly is not avoiding sensitive resources by placing its footprint within important areas of high desert tortoise density.	Refer to Response to Comment B14-55. The inner boundaries were not expanded as compared with the 2008 application, as stated in the Response to Comment B14-56. The footprint of the facility in the 2008 lease was 12,000 acres (4,856 hectares). The Solar PEIS does not apply to this Project, as discussed in Master Response 1: Alternatives .
B14-58	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	The DEIS and desert tortoise surveys provided by the applicant make clear that BLM could not rationally conclude that “[t]he proposed site contains low tortoise densities,” nor that “[t]he project will result in minimal translocation of adult and sub-adult tortoise to acceptable locations,” nor that “[t]he project can be sited and constructed to allow for adequate connectivity... that ensure that the project does not isolate or fragment tortoise habitat and populations.” ²⁶	The factors cited by the commenter are those from the Solar PEIS, which does not apply to this Project, as discussed in Master Response 1: Alternatives . Refer to the Response to Comment B14-52 for an explanation of the disclosure of impacts for this Project, including connectivity, as required under NEPA.
B14-59	9/4/2019	Schoenhut, Karimah	Sierra Club	BLM Management	Therefore, if the application cannot properly be treated as “grandfathered,” approval of the proposal or either of the two alternatives clearly would violate BLM’s own policies and procedures for the evaluation of applications in variance areas. See, e.g., Bahr v. U.S. Env’tl. Prot. Agency, 836 F.3d 1218, 1229 (9th Cir. 2016) (agency must provide a “reasoned explanation” for departing from its own policies).	Refer to Response to Comment B14-55. The Project has been determined to be "grandfathered," as the ROW application pre-dates the Solar PEIS (as described further in Master Response 1: Alternatives , under the Off-Site Alternatives). The NEPA analysis will be used to inform the BLM's decision whether or not to approve or deny the ROW application.
B14-60	9/4/2019	Schoenhut, Karimah	Sierra Club	Alternatives	Based on the information in the DEIS and supporting documents, approval of this project or either of the action alternatives would not comply with NEPA, nor would it comport with FLPMA, due to the severe and substantial impacts to the desert tortoise, and the lack of scientific information on the effects of the mowing alternatives. BLM should consider in detail additional alternatives that would avoid harm to desert tortoises and the high quality, densely occupied habitat at issue here.	Refer to Master Response 1: Alternatives for a discussion of the process for consideration of alternatives in compliance with NEPA and for a discussion of how this process relates and adheres to FLPMA (under Purpose and Need). The commenter has not specified why they believe an approval of the Project would not comport with FLPMA; therefore, a specific response cannot be provided. Refer to Master Response 2: Mojave Desert Tortoise for a discussion of the mowing methods proposed, acknowledging it is a new method and the long-term monitoring that will be employed, as well as a discussion of the mowing alternatives and disclosure of associated impacts and the reduced potential severity of desert tortoise impacts compared with the Proposed Action. Successful reoccupation and reduced impacts to tortoise connectivity has potential to occur under the mowing alternatives, whereas neither would occur under the Proposed Action.
B14-61	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Impacts to tortoises in this area are particularly worrisome given that the Northeastern Mojave recovery unit is the only recovery unit out of five where trends in desert tortoise abundance have not been falling, and instead appear to have been increasing over the past 15 years (Allison and McLuckie 2018). One could argue that impacts to tortoise populations in this region should be avoided to ensure continued population growth and successful recovery of this listed species, which requires stable or increasing populations over 25 years (Recovery Criterion 1 from Desert Tortoise Revised Recovery Plan 2011 USFWS).	It is true that the overall population trend in the NMRU is trending upward. Refer to Master Response 2: Mojave Desert Tortoise (under Desert Tortoise Habitat and Densities) for a discussion of how the Biological Assessment for the Project, provided as an appendix to the Final RMPA/EIS, provides considerable supplemental information on desert tortoise densities, habitat, connectivity, corridors, ACECs, CHUs, and linkages that expands on the information provided in the Draft RMPA/EIS. The USFWS had jurisdiction over the allowable impacts to desert tortoise. The consultation with the USFWS under Section 7 is ongoing. A Biological Opinion will be is expected in early November 2019, including a jeopardy determination.
B14-62	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	There are two areas of concern regarding these pre-construction surveys. First, both surveys reported conducting transects of unequal length, but used an average transect length in the ‘equal transect lengths’ tab in calculations. They show in Exhibit 12 of the Fall 2017 report and in Exhibit 13 of the Spring 2018 report their calculations using transects of equal length. The Fall 2017 report used the USFWS 2010 spreadsheet and the spring 2018 report used the USFWS 2017 spreadsheet for calculations. I downloaded both spreadsheets from USFWS websites on August 26, 2019 and compared outputs with ‘dummy data’ in both spreadsheets to compare differences between estimates from unequal and equal transects. There	Survey transects varied in length due to the irregular site layout. Because there were over 2,000+ transects, an average “equal” length was derived as discussed in the reports and the estimates were based on the USFWS spreadsheets. It is difficult to discuss the asserted discrepancies without additional information, but tortoise density is far from an exact science. Typically, density calculations will indicate high, medium, or low densities areas. Clearance surveys are utilized to refine the true density of an area

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					were discrepancies in the estimated number of tortoises depending on which tab was used and whether the same number of tortoises were seen on transects of equal versus unequal lengths. I do not have the survey and transect data from the work conducted in 2017 and 2018 to determine the magnitude of the discrepancies, but it is troubling that the survey reports did not appropriately enter their data into the ‘unequal transect lengths’ tabs to most accurately estimate the number of tortoises in the site footprints. This should be corrected to ensure that the best estimate is obtained for the number of tortoises to be adversely affected. Second, data collected on tortoises in Ivanpah Valley showed that tortoises can be more active in the spring than in fall (Fig. 5 from Peaden et al. 2017), which means Fall surveys (main footprint; Sites A–E) may encountered fewer tortoises and thus underestimated the number of tortoises residing in the site footprints. If either the use of the wrong tab in the survey spreadsheets or conducting the surveys in Fall when tortoises are less active led to underestimates, the true number of tortoises adversely affected by the Proposed Action and Alternatives could be much greater.	<p>and when these densities differ from those anticipated, consultation with the USFWS may occur to adjust take limits. The USFWS also utilizes the clearance survey data to refine the statistical formula used to estimate density. Spring and/or fall surveys are approved by USFWS protocol. Moreover, the USFWS was consulted prior to both survey efforts to discuss prior to initiating surveys.</p> <p>When the original surveys were performed in the fall of 2017 the 2010 protocol was used and thus the 2010 spreadsheet, to be consistent, which was the only accepted version at the time of the survey. The 2017 spreadsheet was adopted by the end of 2017. The 2018 spring surveys used the new protocol, since at that time it was adopted.</p> <p>There is ample scientific support for these survey windows. Tortoises are extremely active in the fall, as anyone who works on tortoises year-round is aware. Testosterone levels peak in the fall, and courtship activity is frequently observed (Rostal, et al. 1994). Male tortoises are particularly active, searching for females. Of note, tortoise activity in both spring and fall can be substantially curtailed by lack of forage, so spring surveys do not guarantee abundant activity. Further, tortoises are underground during much of the spring activity period due to drying forage and increasing temperatures (even when the latter are below the protocol suggested survey threshold of 35°C [95°F] [formerly 40°C [104°F] in the 2010 survey protocols]).</p>
B14-63	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Based on surveys conducted by Phoenix Biological Consulting in Fall 2017, as many as 215 adult tortoises would be subject to take along with permanent loss of habitat under the proposed action (but see concerns raised above). The DEIS states that under the Proposed Action, “distant translocation” of adversely affected resident tortoises is not feasible given that there are “no known areas large enough to accept the desert tortoises that meet the USFWS desert tortoise translocation guidance definition of ‘depleted population’” (page 3-86 of DEIS). It is thus unclear what the fate will be for the estimated 215 resident tortoises affected by the Proposed Action. Would they be moved just outside the project footprint? Would there be a greater effort to identify possible recipient sites to receive the distant translocation tortoises? There is discussion under the Alternatives of “distant translocation” of 34–36 tortoises to a site south of development areas B and D (page 3-86 of DEIS). Is this only feasible under the Alternatives because of the smaller number of tortoises for distant translocation compared with the Proposed Action? The omission of a description of a clear fate/disposition for these animals under the Proposed Action muddies the comparison of possible adverse effects among the Proposed Action and Alternatives.	<p>Refer to the Response to Comment B14-31 for the discussion of impacts to the 215 adult tortoises (and over 900 juveniles) expected under the Proposed Action. The Draft RMPA/EIS adequately disclosed the outcome that "The Proposed Action would result in the direct or indirect take of up to all tortoises found on the Project site, since there are no places within the Northeastern Mojave Recovery Unit where the tortoises can be moved...The take of all adult and juvenile tortoises on the Project site, in addition to the loss of habitat, would also result in a substantial adverse impact on the species and the local population." Clarifications have been made in the Final RMPA/EIS that the take, as used to describe effects in the Draft RMPA/EIS, referred to anticipated mortality take or a "loss" for the Proposed Action, as compared with a take for moving and handling under the alternatives. The term "take" has been replaced or augmented with clearer language throughout the Final RMPA/EIS to better describe the differences between the action alternatives and the Proposed Action. The reader is afforded the appropriate detail of the outcome to compare alternatives, even if the means by which the mortality take would occur is not known or specified.</p> <p>The 34 or 36 adult tortoises (depending on the alternative) would be translocated to an area south of the Project area, as shown in Table 3.8-2 on page 3-86 of the Draft RMPA/EIS. While the area to which they are moved does not meet the definition of depleted population, the translocation can be allowed by the USFWS who has jurisdiction over impacts to the species under the ESA. The Desert Tortoise Translocation Plan is included as an appendix to the Final RMPA/EIS and provides more information on the methods used for translocation. A Long-Term Monitoring Plan will also be developed and implemented for the Project.</p>

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B14-64	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	The Alternative Actions described in the DEIS require the use of a new, largely untested site preparation, installation, and operation and maintenance (O&M) method of mowing vegetation rather than the “disk and roll” method of traditional construction that results in substantial crushing and complete, long-term loss of vegetation and habitat. After mowing and construction under the Alternative Actions, the plan is for most tortoises to recolonize previously used, but now mowed habitat. O&M would also require mowing an area on an expected 5-year rotation and there would still be a loss of ~20% of vegetation to crushing. Due to slight changes in the infrastructure footprint, the All Mowing Alternative would increase the number of desert tortoises adversely affected from 215 to 254 tortoises. A Hybrid Alternative wherein 65% of the footprint would be mowed and 35% built using traditional methods would result in 219 tortoises being adversely affected (but see concerns above about tortoise estimates).	<p>Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance and how impacts to tortoise are minimized during operations and maintenance. The impacts were briefly addressed on page 3-87 of the Draft RMPA/EIS, where it states, "Ongoing operation would result in additional impacts on desert tortoises from human activity during solar facility maintenance. Additional desert tortoise protection measures would be required to reduce effects during O&M, as identified in the Project-specific Biological Opinion and Incidental Take Permit." Measures are required that directly address and protect all tortoise during operations and maintenance. Tracked vehicles would not be used in the solar facility once tortoise reoccupy the site unless the provisions identified in the Biological Assessment (and Biological Opinion) to avoid impacts are met. Soils would not be compacted, and non-native plants would be treated through various measures described in MM VG-1 in Appendix H and the Integrated Weed Management Plan. These effects were addressed in the Draft RMPA/EIS on pages 3-85 through 3-90 and elaborated on further in the Biological Assessment, included as an Appendix to the Final RMPA/EIS. The Draft RMPA/EIS also adequately disclosed that "Desert tortoise habitat over the entire solar facility acreage of 7,062 (2,858 hectares) would be eliminated, but tortoises could reoccupy up to 65 percent of the site when vegetation returns. However, it is not known whether reoccupation would be successful." on page 3-90.</p> <p>While the Draft RMPA/EIS acknowledged that the outcome of reoccupation is not known, Master Response 2: Mojave Desert Tortoise (under Scientific Study) provides a discussion of the reduced potential severity of impacts afforded by the mowing alternatives, where success of reoccupation by tortoise and wildlife, and thus reduced impacts, is possible, whereas it is not under the Proposed Action. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise, particularly related to mowing.</p>
B14-65	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	The premise that the Alternative Actions will minimize harm and limit adverse impacts to desert tortoises relies on the untested assumption that mowed habitat would constitute viable habitat for desert tortoise recolonization and long-term use.	<p>The comment is acknowledged and consistent with the analysis of the Draft RMPA/EIS regarding a level of uncertainty in the mowing approach. Refer to Master Response 2: Mojave Desert Tortoise (under the Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and the long-term monitoring that will be employed. While the mowing method is largely untested, the Draft RMPA/EIS is clear that the habitat would be drastically altered. Many questions remain relative to continued and successful use of such altered habitat by desert tortoises and other species. The Long-Term Monitoring Plan will examine the feasibility of the mowed approach for future solar sites, relative to both tortoises and other species. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise, particularly related to mowing.</p>
B14-66	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Mowing would reduce all vegetation, including the dominant perennial plant creosote (<i>Larrea tridentata</i>), to a height of 24 inches, with possible areas needing additional cutting to a height of 18 inches. This could present a few challenges for the desert tortoise, a species that both directly and indirectly relies on large healthy creosote bushes throughout most of its range. First, studies and firsthand experience show that tortoises often preferentially dig burrows or create smaller “resting pallets” at the base of creosote bush (Drake et al. 2015). Creosote is a long-lived perennial plant that often reaches heights of as much as 4–6	While true that most soil burrows are constructed under creosote or within creosote clones, shade is probably only one factor. Tortoises are opportunistic burrowers, often targeting micro-topographical relief, so burrowing under larger shrubs is also likely to be partly due to the soil accumulation that occurs under long-lived and larger shrubs. In the mowed habitat at the Project site, the creosote will be mowed, but the root crowns

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					feet or greater depending on local climate and regional soils. In general, tortoises tend to place their burrow refuges under large creosote, likely because it offers shade and protection from extreme summer temperatures and cold winter winds as well as obscures them from predators. The importance of live creosote to long-term tortoise residence is reflected in a study of burned and unburned desert habitat that found while tortoises would move into burned areas to feed on annual plants, they often returned to unburned areas that retained unburned, large, live creosote bushes for use as shelter (Drake et al. 2015).	and original soil accumulation (i.e., micro-topographical relief or “mounds”) will remain. It should be noted that large creosote bushes, as the commenter describes, are relatively uncommon at the site except in washes. Creosote average roughly a meter or less in height on the site (visually estimated), so mowing to 24 inches (61 centimeters) will comprise only a small height reduction. The panel rows would be spaced approximately 20 feet (6 meters) apart, which is typical for single-axis tracking systems. Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. There would be space between rows of panels where vegetation would not need to be trimmed during O&M. In addition to the maintained vegetation, the panels will offer supplementary shade. Original burrows also will be flagged and avoided during construction in mowed areas, as much as possible.
B14-67	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	PVCs may provide some mitigating shade and local cooling, but it is unclear whether tortoises, who are often behaviorally adapted to burrowing near large creosote, would adjust their behavior to reclaim or dig new burrows in a highly altered, mowed landscape in the absence of large creosote. It is also unclear whether creosote bushes mowed to 24 inches in height would provide the same thermal and predator protection effects as do unaffected creosote bushes throughout much of the range of the desert tortoise.	Refer to Response to Comment B14-66 regarding the heights of creosote at this particular site and why mowing or trimming is anticipated to result in only a small reduction in creosote height on the site, and thus, only a small reduction in tortoise burrowing and shade supply. The panel rows would be spaced approximately 20 feet (6 meters) apart, which is typical for single-axis tracking systems. Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. There would be space between rows of panels where vegetation would not need to be trimmed during O&M.
B14-68	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Juvenile tortoises also tend to place burrows under creosote, presumably because juvenile tortoises cannot burrow effectively at their small size and instead rely on burrows that are highly abundant at the base of creosotes and which are dug by kangaroo rats (Todd et al. 2016). Kangaroo rats (<i>Dipodomys merriami</i>) feed heavily on creosote seeds (Nagy and Gruchacz 1994), and thus rely on creosote to support dense populations. It is unclear whether large creosote bushes would survive substantial reduction in size and biomass after they are mowed to a height of 24 inches. And, should creosote bushes survive, it may be unlikely that smaller, mowed creosote bushes would afford the same opportunities for shelter and shade and thus serve the same purpose they once did and therefore be used by juvenile tortoises for burrow placement. Additionally, substantial reduction in creosote size and biomass from mowing would likely result in a concomitant decrease in creosote seed production; kangaroo rats (<i>Dipodomys merriami</i>) feed primarily on creosote seeds (Nagy and Gruchacz 1994) and a reduction in their food would reduce kangaroo rat populations, resulting in fewer burrows for use by juvenile desert tortoises. This cascading effect may result in reduced survival or densities of young tortoises and thus reduce long-term recruitment and population viability of resident desert tortoises. Additionally, at least one study has shown that large creosote canopies support abundant and diverse annual plant biomass that comprises a critical portion of desert tortoise diet (Jennings and Berry 2015), another aspect that may be adversely affected by mowing when it reduces the size and biomass of creosote bushes. It is possible that some of these potential adverse effects mediated through impacts to creosote could be mitigated by ensuring that abundant, healthy, and large creosote bushes remain prevalent immediately adjacent to the site footprint or in unmowed remnant patches within (see below). The possible retention of unmowed areas within the larger site footprints (B and D, in particular) does not appear to have been considered in any Alternatives. Ideally, all tortoises moving through, or spending time in, the mowed footprints should be able to have home ranges that allow them to settle for longer periods in unmowed habitat. For juveniles or for adult tortoises whose core home ranges once laid entirely within mowed footprints, this would be unlikely; home ranges of adult tortoises range from 10–75 acres (O’Connor et al. 1994; Franks et al. 2011), which is far smaller than the footprint of the sites. It is unclear what tortoises would select for shelter sites and burrow placement in a mowed landscape and how tortoises would fare long-term.	As stated in the Response to Comment B14-66, creosote at this site have relatively small stature and mowing to 24 inches (61 centimeters) would not comprise a substantial reduction. See the Response to Comment B14-69 regarding leaving patches of intact habitat. Initially, it is anticipated that the rodent population would be significantly compromised simply by construction activities, as it is on every solar construction site. However, over time, it is also anticipated that the vegetation patches would recover sufficiently to support kangaroo rats as well as other rodents, although population levels are likely to be altered. It is unknown whether tortoises would nest in the altered habitat, such that juvenile tortoises would be present, but examination of this factor and multiple habitat and community variables are expected to be elements of the Long-Term Monitoring Plan. This mowing and reintroduction approach is new and the outcome of successful reoccupation is not known. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and the long-term monitoring that will be employed. Adverse effects would occur, as analyzed in the Draft RMPA/EIS, but preserving habitat, albeit altered, and keeping breeding tortoise populations within their home range far outweighs the total loss of habitat.
B14-69	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered,	A possible solution to the loss of tall or vibrant creosote bushes in the footprint of the mowed areas would be to modify the site in such a way that several large, intact patches of unmowed areas are allowed to	Patches of intact habitat offer the benefits the commenter suggests and have been shown to promote population sustainability in a heterogeneous

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				and Candidate Species	persist interspersed among the otherwise mowed landscape. I would estimate that areas of 5–10 acres would be a minimum starting point to retain healthy and unmowed creosote that could fall within the home range areas of tortoises recolonizing the mowed sites. The distribution of any retained unmowed patches should be of a size and placed in a manner that maximizes the overlap with the home ranges of as many tortoises as possible. The possibility of retaining unmowed patches is akin to the practice of leaving standing shade trees in agriculture when forest is converted in the tropics; remaining shade trees can provide refuge for biodiversity in otherwise altered landscapes (Bhagwat et al. 2008). The practice of leaving important refuge trees (clusters) has also been integrated into management for the federally listed Red-Cockaded Woodpecker in timber lands of the Coastal Plain of the southeastern US (Management Guidelines for the Red-cockaded Woodpecker).	landscape in multiple species. Maintaining undisturbed patches of habitat may not be practical for the Project footprint and could result in a larger area needed overall for the Project should patches within the site be left panel-free and unmowed. The panel rows would be spaced approximately 20 feet (6 meters) apart, which is typical for single-axis tracking systems. Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. There would be space between rows of panels where vegetation would not need to be trimmed during O&M.
B14-70	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	A second concern relates to the behavior of desert tortoises along fences after they are allowed to recolonize mowed habitats. Desert tortoises have well-established home ranges to which they have become accustomed after years (or decades) of living in an area. They also have a high degree of spatial awareness and memory and the ability to travel in decided directions to locate their own distant burrows or prime sites for foraging or water to which they are accustomed to using. The recolonization of mowed areas may present a specific challenge for tortoises whose home ranges will be interrupted by exclusion fencing that separates mowed areas of their recolonized former home ranges from excluded areas of traditional construction. In my own studies, we have seen using high resolution GPS-trackers tortoises determinedly pacing alongside — for days and weeks — newly installed fencing that interrupts former parts of their home range. The result has been elevated body temperatures and in one case, death from overheating (Peaden et al. 2017).	It is well known that tortoises pace fences for several weeks after a fence is constructed in their home range. For this reason, the minimization measures listed in the Biological Assessment, included as an appendix to the Final RMPA/EIS, include installing shade structures, plus specific monitoring for at least 2 weeks if a fence is constructed during the active period or immediately after tortoises become active in spring, if a fence is constructed in winter (BLM 2019). Tortoises commonly have been observed using fence shade structures, even well after the initial disturbance by fence construction. The Desert Tortoise Translocation Plan, added as an appendix to the Final RMPA/EIS, and the analysis in the Draft RMPA/EIS, also recognize that tortoises moved outside the Project site would adjust home ranges during the construction period when they are restricted from the Project site. Once permitted to re-occupy the site, adjustments would continue.
B14-71	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	It will be necessary, especially under the alternative Hybrid Mowing action, to monitor for any pacing behavior or to install shade structures immediately along exclusion fencing after reintroduction of tortoises to mowed areas. Although nearby PVC in the mowed areas may provide some shade and local cooling, if the structures are not readily recognizable to tortoises as providing a safe space or shelter from excessive temperatures, they may not move to PVC shade to cool. Other projects in desert tortoise habitat have suggested the installation of shelter sites at intervals along exclusion fencing to prevent tortoises from overheating.	Refer to Response to Comment B14-70. Per the requirements of the Biological Assessment, included as an appendix to the Final RMPA/EIS, monitoring and shade structures along the fence would be required as suggested by the commenter. One of the measures identified in the Biological Assessment is that "[d]uring the tortoise activity seasons, all new fences will be checked twice a day for the first two weeks after construction, or the first two weeks after tortoises become active if fence construction occurs in the winter, including once each day immediately before temperatures reach lethal thresholds. Tortoise guards will be placed at all road access points where desert tortoise-proof fencing is interrupted to exclude desert tortoises from the Project footprint. Gates or tortoise exclusion guards will be installed with minimal ground clearance and shall deter ingress by desert tortoises. After the first 2 weeks, all tortoise exclusion fencing will be inspected monthly during construction, quarterly for the life of the Project, and immediately following all major rainfall events. Any damage to the fence will be repaired within two days of observing the damage and be reported to the Service to determine whether additional measures are necessary. During all fence monitoring, shade structures will be inspected for their effectiveness and adjusted as needed to increase their effectiveness." A Biological Opinion is expected to be issued by the USFWS in early November, which will include methods to address impacts to desert tortoise.
B14-72	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered,	Given the average distance that tortoises move daily (90 m, O'Connor et al. 1994; 73–300 m, Franks et al. 2011), and the small height of mowed creosote (see discussion above), it is unclear how permeable the mowed areas will be for tortoises. Although the mowed areas will remain open to ingress/egress of	Refer to the Response to Comment B14-65. It is currently unclear how tortoises would use the mowed area. The Long-Term Monitoring Plan will

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B14-73	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Under the Hybrid Alternative, the current proposed siting of traditional construction would create a considerable north-to-south barrier of exclusion fencing that would restrict east-to-west movement of tortoises through the area. Specifically, Site B and Site D would both have north-to-south barriers that would be nearly continuous for >4 miles with the exception of one small break (Fig 2-22 from DESI Volume 2 Appendices). An alternative design may be to locate the traditional construction in Site B to the northernmost area so that Site B would be bisected from east-to-west, with the bulk of the central and southernmost parts of Site B being used for mowing and recolonization. If feasible, such a change would reduce some bottleneck tortoises would face when moving from east or west of the project through its area, if they do in fact move through mowed areas. Given the density and distribution of tortoises and their signs, the inclusion of unmowed areas or avoiding the development of the central-most portion of Site B would likely have the greatest effect on minimizing harm to resident tortoise populations.	Multiple configurations of the mowing area and development areas were considered during the alternatives screening. The Hybrid Alternative places traditional development where the fewest tortoises would be affected and where those tortoises cannot be moved outside the project boundary for other safety reasons (e.g. Valley of Fire Road). Connectivity was addressed in detail in the Draft RMPA/EIS and Biological Assessment and as discussed in the Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow). As analyzed, the movement of tortoises would be limited from east to west to and from the North Muddy Mountains due to the long barrier fence along development areas B, C, and D for the traditional development areas, but the fencing would pose a shorter barrier to connectivity than the Proposed Action.
B14-74	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	Conclusions: To date, only a small ~80 acre solar site — Valley Electric Association Community Solar Project in Nye County, Nevada — has used the mowing and reintroduction method like that proposed here. I have found no information from that project about the success, challenges, or limitations as they pertain to impacts to desert tortoises that could be used to further inform my current evaluation of the DEIS. It is also unlikely given the small size of the Valley Electric project that many tortoises were affected or that there will be much opportunity to inform future use of mowing and recolonization in site designs more broadly. Given the size of tortoise home ranges compared with the size of the VEA site, it is likely that few tortoises are affected and also likely that those that are affected have suitable unmowed refuge habitat outside the small footprint of the VEA footprint.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and the long-term monitoring that will be employed. No long-term data is available as this technique is new. This method has been employed on the small-scale project mentioned by the commenter, but published data is not available on the outcome in relation to desert tortoise reoccupation. Long-term effects are unknown, as is acknowledged in the Draft RMPA/EIS. A Long-Term Monitoring Plan and Site Restoration Plan will be implemented with monitoring and reporting requirements.
B14-75	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	If mowing and recolonization is to be fully evaluated for use as an Alternative in the Gemini Solar Project, more data are greatly needed. A carefully planned experimental design on an area of approximately 500 acres could prove highly illuminating in understanding the full scope of impacts to tortoises for this and potentially other solar projects that seek to use mowing and recolonization in their proposed site designs. Ideally, resident tortoises and those outside the area of impact should be outfitted with radio-transmitters and their health, survival, and movements should be compared before and after construction (a typical BACI experimental design). Special attention should be paid to whether or not tortoises recolonize mowed areas and if so, to the types of burrows they use in mowed areas and any changes in typical movement rates, home range sizes, and the health of animals as a consequence of inhabiting mowed habitat. I would also recommend the attachment of very small thermal recording devices on tortoises to know the types of temperatures they are experiencing as a consequence of PVC shading or heightened movement rates that can lead to altered body temperatures. Comparisons for all of these metrics should be made to a nearby unaffected tortoise population as a proper control. Such data could also shed light on the degree to which connectivity is maintained or disrupted by the creation of mowed habitats. Finally, it would be worthwhile to conduct systematic, random vegetation sampling before and after in the mowed and nearby sites to examine changes in annual plants and the invasive	It is currently unclear how tortoises would use the mowed area. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and the long-term monitoring that will be employed. The Long-Term Monitoring Plan will examine this both spatially and temporally, as well as measure multiple variables that pertain to community functioning. A well-planned experimental approach, with both temporal and spatial controls will be implemented. The biologists involved in developing and implementing the experimental design have many years of experience with typical and novel techniques and equipment used on tortoises. Additional input from experienced community ecologists, botanists, and small-mammal biologists has also been included to measure factors that may influence community functioning and, ultimately, tortoise use of the site. The suggestions are noted and will be taken into consideration during implementation and preparation of the Long-Term Monitoring Plan, should the Project be approved. The BLM, at the ROD, can choose to approve a smaller project to test the mowing methods. Implementation of a separate

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					species composition and to determine whether adequate and typical native forage plants and refuge plants are maintained in a manner that supports desert tortoise populations without adverse effects.	or phased smaller, experimental site (i.e., 500 acres [202 hectares]) was not analyzed in the RMPA/EIS.
B14-76	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	1) There are concerns about the accuracy of the estimate of tortoises in the proposed site footprints: Fall surveys may under-estimate the number compared with Spring surveys and estimates should have used USFWS spreadsheet tabs for unequal transects given that unequal transects were used to collect the count data.	USFWS protocol was utilized and consultations with the USFWS occurred prior to both surveys. Refer to the Response to Comment B14-62 for more information on this topic and the adequacy of the surveys.
B14-77	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	2) The DEIS fails to provide a clear explanation as to whether and where the estimated 215 adult tortoises under the Proposed Action will be translocated. This lack of clarity obscures comparison of adverse impacts to those anticipated from the Alternatives.	Refer to the Responses to Comments B14-31 and B14-63, and Master Response 2: Mojave Desert Tortoise (under Take of Desert Tortoise) for the discussion of impacts to the 215 adult tortoises (and over 900 juveniles) expected under the Proposed Action and the differences in impacts between the action alternatives and the Proposed Action. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise, particularly related to mowing.
B14-78	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	3) There is considerable uncertainty about whether Alternative Actions will substantially minimize harm to tortoises. The supposition that mowing and recolonization will result in reduced harm requires much additional data and testing before a conclusive determination can be reached as to its effectiveness. a. It is unclear how creosote will fare and function as desert tortoise habitat after being mowed. b. It is unclear whether tortoises will place burrows under smaller, mowed creosote and whether it will protect them from temperature extremes and predation. c. It is unclear what the impact of mowed creosote will be on kangaroo rats, on which juvenile tortoises rely for burrow construction. d. It is unclear whether the mowed habitat will be recolonized or perceived as suitable long-term habitat by tortoises. e. It is unclear whether tortoises will view mowed habitat as permeable to movements in a manner that maintains connectivity across such large mowed landscapes.	Refer to Responses to Comments B14-65 through B14-68.
B14-79	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	4) The DEIS should consider alternatives that preserve patches of unaltered habitat distributed purposefully throughout the mowed areas, primarily to preserve large creosote that provides important refuge for tortoises and associated species on which they rely.	Refer to Response to Comment B14-69.
B14-80	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	5) The DEIS fails to consider potential adverse impacts of pacing by tortoises along exclusion fencing and should consider mitigation measures to reduce the dangers of pacing behavior, such as monitoring or shade structures, especially in areas where mowed habitat and traditional construction share exclusion fencing and occur in former tortoise home ranges.	Refer to Responses to Comments B14-70 and B14-71. The impacts are addressed in the Biological Assessment and Desert Tortoise Translocation Plan, included as appendices to the Final RMPA/EIS.
B14-81	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	6) It is unclear whether mowing would preserve broader connectivity of tortoises across the landscape beyond the site footprints.	Refer to the Response to Comment B14-72 regarding the lack of larger regional connectivity for this site (such as to the existing CHUs and ACECs), the potentially adverse localized connectivity impacts, and how mowing is expected to reduce the severity of those impacts as compared to the Proposed Action. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise, particularly related to mowing.
B14-82	9/4/2019	Schoenhut, Karimah	Sierra Club	Threatened, Endangered, and Candidate Species	7) The Hybrid Alternative would greatly impair connectivity by creating a north-south barrier due to exclusion fencing along the “traditional construction” portions of Sites Band D. The DEIS should consider alternative configurations/locations for the traditional construction portion that would reduce the continuous extent of the barrier to east-west movement, such as relocating the traditional construction portion of Site B to the northernmost part of it so that Site B would be instead bisected from east-to-west instead. It is unclear whether such a change could be made in a way that preserves the central-most and southern parts of Site B where most tortoises were found.	Refer to the Response to Comment B14-73 regarding configurations analyzed and the factors for determining the areas of traditional development under the Hybrid Alternative.

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B15-1	9/5/2019	Zablocki, John	The Nature Conservancy	Alternative	1) If the BLM permits the project, it should adopt the All Mowing Alternative to minimize onsite impacts to the land and wildlife. This EIS did not include an alternative to raise the solar panels above the height of onsite vegetation and obviate the need for mowing or blading ¹ . We recommend that the BLM include this type of onsite design as an alternative in NEPA analysis for any future large-scale solar projects in southern Nevada.	<p>The commenter's preference for the All Mowing Alternative is noted. A large amount of the existing vegetation on the Project site is under 24 inches (61 centimeters), which is the height at which vegetation would be mowed. Twenty-four inches (61 centimeters) was determined to be the height that would allow for the functioning of viable vegetation. As part of the design, the solar panels in mowed areas would be raised higher by at least 1 foot (0.3 meter) compared to traditional development areas (refer to pages 2-6, 2-7, and 2-8 of the Draft RMPA/EIS for panel height differences). Increasing the height of the solar panels further in the mowed areas would result in greater effects to visual resources and deeper and potentially larger pilings into the ground.</p> <p>No mowing would occur once the facility is in operation. Vegetation would on be trimmed from existing roads or by hand. Clarifications have been made throughout the Final RMPA/EIS. Page 44 of the Biological Assessment, available with the Final RMPA/EIS states, "Solar array areas constructed using mowing would need to have vegetation periodically mowed or trimmed to a height of 18 to 24 inches (46 to 61 centimeters). Vegetation under the solar arrays would be cut or trimmed by hand during panel cleaning to a height that allows the vegetation to maintain its habitat function for desert tortoise and to maintain hydrology patterns on the site while not impacting the functionality of the solar panels. It is anticipated that trimming would occur every few years but not annually."</p>
B15-2	9/5/2019	Zablocki, John	The Nature Conservancy	Mitigation and Design Measures	2) If determined to be within the BLM's authority, the agency should require the proponent to adequately fund hypothesis-driven scientific studies that are publishable in peer-reviewed literature, and sufficient in scope and rigor to address the key knowledge gaps in the EIS that inhibited the agency's ability to fully assess the environmental impacts of the Gemini project or potential future developments of similar scope, character (e.g., mowed habitat), and scale.	Refer to Master Response 2: Mojave Desert Tortoise that identifies that a Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion that will allow for scientific study of the site and the methods proposed. The response also describes the monitoring and reporting under the Site Restoration Plan, available with the Final RMPA/EIS.
B15-3	9/5/2019	Zablocki, John	The Nature Conservancy	Vegetation and Jurisdictional Waters	The most salient questions the EIS could not address due to lack of available evidence, but which effective study of the Gemini project could resolve for future agency decision-making, include: a. to what extent does mowed vegetation in the project area affect utilization by wildlife, community ecology, and ecosystem function (e.g., carbon sequestration)?	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) that identifies that a Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The response also describes the monitoring and reporting under the Site Restoration Plan, available with the Final RMPA/EIS. These studies would be specific to vegetation growth and health, and desert tortoise population health. Refer to Response to Comment B6-5 for an explanation as to why carbon stock impacts would be minor, particularly for mowing alternatives. Monitoring and studies are not required under NEPA, but this does not exclude them from being conducted.
B15-4	9/5/2019	Zablocki, John	The Nature Conservancy	Vegetation and Jurisdictional Waters	b. what effect does a project of this scale have on ecosystem processes beyond the immediate project footprint (e.g., habitat fragmentation and wildlife migration effects, plant dispersal and recruitment, aeolian process effects)?	Wildlife effects were addressed starting on page 3-69 of the Draft RMPA/EIS. The analysis identified on page 3-71 that, "[t]he fencing around the Project could block the free movement of any wildlife that cannot fit through or under the fence. Since smaller wildlife are common and abundant, effects would not be adverse. Impacts on the movements of large game species would be minimal since such species rarely use the Project site." It is unclear what migration the commenter is referring to. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for more information on why bighorn sheep are not found in the area. Birds can migrate over the area. Movement of desert tortoise would be impacted for the Proposed Action but those impacts are reduced with the mowing alternatives, as was discussed in Section 3.8: Threatened, Endangered, and

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						<p>Candidate Species of the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) for more information on desert tortoise impacts related to connectivity and habitat fragmentation.</p> <p>Impacts are not expected to be adverse given that most wildlife (other than desert tortoise) are small and common and that large game do not frequent the area. Additional monitoring is not required. Plant dispersal and recruitment, particularly threecorner milkvetch, will be monitored in accordance with MM VG-2 in Appendix H and the Site Restoration Plan requirements, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to threecorner milkvetch including aeolian processes was addressed in the Draft RMPA/EIS.</p>
B15-5	9/5/2019	Zablocki, John	The Nature Conservancy	Mitigation and Design Measures	If the BLM determines it is within their authority to do so, it should require the proponent to offset significant unavoidable environmental impacts via offsite conservation and restoration actions. Given the proximity of Gemini to the Dry Lake Solar Energy Zone and similarity in habitat types, the Dry Lake Solar Energy Zone Regional Mitigation Strategy should serve as a good minimum baseline for appropriateness of offsite mitigation2. If the BLM does not require this as a condition of the permit, we strongly encourage the project proponent to voluntarily support the Dry Lake Regional Mitigation Strategy at or above of the \$1,816 per-acre fee per-acre mitigation fee paid by the developers at the Dry Lake SEZ.	The Draft RMPA/EIS identified mitigation measures that are required to be implemented, as detailed in Appendix H. The mitigation measures are identified to minimize or avoid each adverse effect of the Project analyzed in the Draft RMPA/EIS, including Mojave desert tortoise. In accordance with Instruction Memorandum 2019-18, "the BLM will not impose, and will not build mechanisms for it to enforce, mandatory compensatory mitigation into its official actions, authorizations to use the public lands, and any associated environmental review documents, including, but not limited to, permits, rights-of-ways, environmental impact statements..." The Dry Lake Regional Mitigation Strategy (RMS) can no longer be applied under Instruction Memorandum 2019-18. Numerous mitigation measures to reduce effects are provided in Appendix H. Compensatory mitigation; however, can be imposed under the ESA and the Project is undergoing review under Section 7 of the ESA concurrent to the NEPA process. Refer to Response to Comment B7-111 for a discussion of remuneration fees identified in the Biological Assessment, available with the Final RMPA/EIS.
C1-1	8/19/2019	Adamson, Sharon	--	Alternatives	Please find a alternate site for this project it will destroy to many important species of plants and animals.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and to potentially reduce some of the impacts or severity of impacts on desert tortoise and threecorner milkvetch. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process. Master Response 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise and sensitive plants, respectively.
C2-1	8/20/2019	Alberto, Gregorio	--	Threatened, endangered, and candidate species	The proposed Gemini Solar project in Nevada is expected to destroy several square miles of tortoise habitat identified by the Fish and Wildlife Service as a priority linkage corridor, meaning that losing it could harm the chances of the species' recovery.	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise connectivity and assessment of impacts and the role of the USFWS during the ongoing Section 7 consultation for this project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM have reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS.

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						Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS. Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.
C2-2	8/20/2019	Alberto, Gregorio	--	Vegetation and Jurisdictional Waters	It will also destroy 25% of the remaining habitat of a critically endangered plant.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat, including the quantification of habitat impacts. MM VG-2 would be implemented, which requires the use of drive and crush instead of disk and roll to reduce impacts to the threecorner milkvetch.
C2-3	8/20/2019	Alberto, Gregorio	--	Alternatives	This is just unacceptable, and the project should be built on a place that would not have such a negative impact on the wildlife in Nevada.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process and on the alternatives' evaluation process. Master Response 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise and native vegetation, respectively.
C3-1	9/5/2019	Barrow, Carissa	--	Alternatives	I believe that various alternatives that meet the purpose and need have not been analyzed in the DEIS. For example, no consideration was given to the fact that the proposed site is much larger than other solar facilities that are generating similar mega-watts. The acre to mega-watt calculations have dramatically change since this application was submitted years ago. Given that, the applicant should, at a minimum, come up with a reasonable acreage request for their project. The current size and scale of the project is much too large given the current improvements that have been made in solar generation facilities.	Refer to Master Response 1: Alternatives for information regarding alternatives considered. The 7,100-acre (2,873-hectare) requirement for a 690-MW solar facility utilizes the 10-acre/MWac (4-hectare/MWac) requirement published in the National Renewable Energy Laboratory report on Land-Use Requirements for Solar Power Plants in the United States (NREL 2013). The 10-acre/MWac (4-hectare/MWac) requirement would require approximately 6,900 acres (2,792 hectares) for a 690-MW facility. Because the Project includes other facilities apart from the solar arrays (O&M building, access roads, fencing, etc.), 7,100 acres (2,873 hectares) was determined as the minimum acreage in order to conservatively size the Project site to ensure 690-MW output. The increase in efficiencies and need for less space based on technology improvements is acknowledged. While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
C3-2	9/5/2019	Barrow, Carissa	--	Old Spanish National Historic Trail	Second, the proposed project seems to be in direct violation of the National Trails System Act which granted the Old Spanish National Historic Trail protection from projects such as this.	Refer to Master Response 5: Old Spanish National Historic Trail for a discussion on the BLM Manual 6280 Inventory and Analysis conducted for the Project in regard to the National Trails Systems Act of 1968. The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. The alternatives reduce the duration of impacts as compared with the Proposed Action and mitigation allows for some actions to promote education and understanding of the Old Spanish Trail's history, but do not substantially reduce the impact. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis regarding the OSNHT, for more information on the additional voluntary

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						mitigation, and for information regarding the MOA process that is ongoing with SHPO and the OSNHT Co-Administrators that could identify other requirements.
C3-3	9/5/2019	Barrow, Carissa	--	Old Spanish National Historic Trail	I do not believe that impacts to a high potential segment of the trail can be properly mitigated, and the alternatives do not adequately explore or exam the effects to a property such as this.	The comment is consistent with the analysis and conclusions presented in Section 3.14: Old Spanish National Historic Trail of the Draft RMPA/EIS. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis regarding the OSNHT, for more information on the additional voluntary mitigation, and for information regarding the MOA process that is ongoing with SHPO and the OSNHT Co-Administrators that could identify other requirements.
C3-4	9/5/2019	Barrow, Carissa	--	Old Spanish National Historic Trail	BLM Manual 6280 is very clear on how Trails should be protected, and the consideration of this project violates that manual and policy.	Refer to Master Response 5: Old Spanish National Historic Trail for a discussion on the BLM Manual 6280 Inventory and Analysis conducted for the Project. The analysis is consistent with the manual's requirements. The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT.
C3-5	9/5/2019	Barrow, Carissa	--	Wildlife, Migratory Birds, and Special Status Species	Third, wildlife connectivity related to bighorn sheep has been largely ignored. The area adjacent to the proposed project is one of the most productive bighorn sheep areas administered by the Nevada Division of Wildlife. This area is given more tags than any other area in the state, and sheep use the valley to graze. Since desert tortoise is an indicator species for bighorn sheep, the impacts to the bighorn were not analyzed under the alternatives. With the disappearance of native forage for desert tortoise there will likely follow impacts to bighorn sheep.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and this species does not regularly use the site. Data available on bighorn sheep movement corridors indicate that the Dry Lake Valley and the Project site are not used as movement corridors by bighorn sheep (NDOW 2006). Desert tortoise use different habitats, generally flat regions, than bighorn sheep. Refer to Master Response 2: Mojave Desert Tortoise for information on typical habitat types of desert tortoise in the Project area. Presence of desert tortoise does not correlate to presence of bighorn sheep in this area.
C3-6	9/5/2019	Barrow, Carissa	--	Wildlife, Migratory Birds, and Special Status Species	Not only do bighorn sheep bring revenue to Nevada, but hunting on BLM lands is part of the mission of BLM's management for multiple uses. As a hunter, and one who has put in for a bighorn sheep tag in that area, I do not believe that a massive solar field will enhance bighorn habitat, but rather it will impact their behavior.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and this species does not regularly use the site.
C3-7	9/5/2019	Barrow, Carissa	--	Vegetation and Jurisdictional Waters	Fourth, the mowing alternative may seem like a great idea, but desert soil compaction related to the large and heavy mowing equipment was skimmed over. The large machinery that is required to mow this pristine, native vegetation is large, heavy, and requires large tires to move over desert soils. This compaction will impact the native seed banks in the soil, in addition to crushing and impacting thousands of linear feet of desert soils.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized. Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities . The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS. Use of these methodologies are the best development

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						method options to allow multiple uses of public lands without permanently damaging soil seed banks, perennial vegetation, or exacerbating weeds.
C3-8	9/5/2019	Barrow, Carissa	--	Vegetation and Jurisdictional Waters	The mowing alternative doesn't even begin to address the infestation of invasive and nonnative species that will occur in the area, and spread outside of the proposed project area. This cumulative impact should be analyzed, especially given the geomorphology of the project area.	Refer to page 3-56 of the Draft RMPA/EIS, which analyzes impacts from invasive weeds for the All Mowing Alternative and implementation of the Integrated Weed Management Plan and Pesticide Use Plan. Implementation of these plans would address weed management. Cumulative impacts from the spread of invasive weeds for the All Mowing Alternative would be less than the cumulative impacts for the Proposed Action (discussed on page 3-53) but would still be substantial and adverse. Impacts are similarly addressed and reduced through the Integrated Weed Management Plan and Pesticide Use Plan for the mowed areas of the Hybrid Alternative. Additional information on impacts related to the spread of invasive and nonnative species are provided in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities .
C3-9	9/5/2019	Barrow, Carissa	--	Recreation	Fifth, the Valley of Fire is a National Natural Landmark and sits near the project area. To put a massive solar field at the entrance to a NNL seems to contradict the very existence of such a landmark. Again, not mitigation measures were presented to off-set the impacts to an NNL such as Valley of Fire.	Refer to Master Response 7: Recreation for information on the Valley of Fire State Park and why the Project would not impact the park. Valley of Fire State Park is outside of the Project viewshed and the Project and would not be visible to users of the park, and the short-term impacts for recreationalists driving towards or away from Valley of Fire State Park, when in the vicinity of I-15.
C3-10	9/5/2019	Barrow, Carissa	--	BLM Management	Sixth, BLM's mitigation hierarchy includes, as the first measure, avoidance. This proposed project should never have gone to the DEIS given its numerous impacts to cultural, historic, biological, visual, and natural resources. Despite this, the BLM continued to push forward with this application. BLM should follow its own rules and regulations and ensure that avoidance be the preferred measure when projects, like Gemini does, have massive impacts to more than two or three of the resources that BLM is mandated with protecting. Avoidance should be the only consideration when a project impacts an NNL, a National Historic Trail, and various threatened and endangered species.	NEPA does not create a general substantive duty on federal agencies to mitigate or avoid adverse environmental effects. The purpose of NEPA is to ensure informed and transparent environmental decision making. Avoidance of adverse impacts due to the resources present on the Project site were considered during the alternatives screening process. Off-site alternatives were considered but dismissed as alternative areas that were of suitable size had the potential for similar or greater environmental effects or other issues. Refer to the Master Response 1: Alternatives for a discussion of the BLM's purpose and need to respond to the ROW application and the consideration of environmental impacts during the NEPA process. Refer to the Draft RMPA/EIS and Appendix H for the analysis of impacts on and mitigation measures addressing cultural (Section 3.12), historic (Sections 3.12 and 3.14), biological (Section 3.6, 3.7, and 3.8), visual (Section 3.10), and natural resources.
C3-11	9/5/2019	Barrow, Carissa	--	Threatened, Endangered, and Candidate Species	Seventh, the desert tortoise cannot sustain another large scale project like this. Recovery units are already full with tortoises moved from multiple projects, and this continued movement of tortoise is unsustainable. Given the high tortoise densities in the project area, I believe that, again, avoidance is the only real consideration. Various solar projects are going in on the other side of the 15 because the habitat there is already largely impacted by industrial use and off-road vehicles. To allow a project to go in prime desert tortoise habitat, and then to relocate tortoise to multiple recovery units seems like a flawed mitigation practice.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on tortoise, the approach to the alternatives since no locations within the Recovery Unit are available for distant translocation, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives. The action alternatives presented for this Project would involve mowing and allowing tortoise to reoccupy the Project site. It would not involve relocating the tortoises to a recovery unit. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as "disk and roll" or "traditional development methods"). This would allow for a portion of the native vegetation to remain. When construction is complete, the security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas.

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C4-1	6/27/2019	Brown, Rachael	--	Alternatives	it is not possible to be a "sustainable" energy source whilst still tearing up critical desert habitat and putting in large solar projects out in the open when there are hundreds of thousands of rooftops and acres of parking lots all throughout Vegas and southern Nevada.	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered. Master Response 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise and native vegetation impacts, respectively.
C4-2	6/27/2019	Brown, Rachael	--	BLM Management	These large solar projects are NOT the way forward with energy independence for this country and this is not an example of "use and enjoyment" for this and future generations when once this array goes in (and in spite of public comments you will once again sellout the American public and put them in) these lands will be completely denuded and fenced off.	The Draft RMPA/EIS states that, "[t]he BLM is authorized to grant ROWs on public lands for systems of generation, transmission, and distribution of electrical energy (Section 501[a][4] and 43 CFR 2800). Taking into account the BLM's multiple-use mandate, the BLM's purpose and need for this action is to respond to the ROW application submitted by the Applicant under Title V of FLPMA (43 USC § 1761) (serial number N-84631) to construct, operate, maintain, and decommission the Project in compliance with FLPMA, BLM ROW regulations, the BLM NEPA Handbook, DOI NEPA regulations, and other applicable federal and state laws and policies." Refer to the Draft RMPA/EIS for the analysis of impacts on and mitigation measures addressing the vegetation on the Project site, including vegetation removal, mowing, and trimming (Appendix H and Section 3.6).
C5-1	9/4/2019	Bundorf, Judy	--	Alternatives	If the developer feels he must build something in Nevada, it should be sited in the Dry Lake Valley North Solar Energy Zone (SEZ). While there would still be irreparable damage to the desert, it at least would not impact the Valley of Fire State Park and tourism. Here is a link to more information on this SEZ: http://solareis.anl.gov/sez/drylake_north/index.cfm	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. No other solar energy zones are located in Clark County.
C5-2	9/4/2019	Bundorf, Judy	--	Alternatives	Additionally, Lincoln County would welcome the project, according to the recent column at this link: https://lasvegassun.com/news/2019/aug/25/benefits-of-solar-powerdevelopment-cross-party-li/	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including locations in the Dry Lake SEZ. The feasibility evaluation also required identifying areas that reduced the need for new transmission. Because of the proximity to Las Vegas, available transmission capacity is primarily in Clark County. Off-site considerations also focused on transmission capacity and the need to minimize new transmission lines. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process, including why alternative sites in Lincoln County were not carried forward.
C5-3	9/4/2019	Bundorf, Judy	--	Alternatives	The ideal solution for more energy from solar would be PV panels on rooftops, overparking lots, and on brownfields.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, and the reasons why they were dismissed. Distributed generation and development on brownfields were considered in the alternative screening process but dismissed. Master Response 1: Alternatives also provides additional information on the alternatives' evaluation process.
C5-4	9/4/2019	Bundorf, Judy	--	Wildlife, Migratory Birds, and Special Status Species	The site chosen for Gemini Solar will impact the Old Spanish Trail, Native American Trails, Arrowhead Trail, the Valley of Fire, and damage the range of the largest herd of desert bighorn sheep in the state, and possibly the entire Southwest. These magnificent animals were brought back from near extinction through joint efforts of the U.S. Department of Wildlife, Nevada Department of Wildlife, and volunteer groups, to high enough numbers that a limited number of hunting permits are issued each year for selective culling of the herds.	The adverse impacts to the Old Spanish Trail were disclosed in Section 3.14: Old Spanish National Historic Trail of the Draft RMPA/EIS. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis on the OSNHT corridor. Section 3.12: Cultural Resources analyzes indirect effects on the historic Arrowhead Trail Highway/Old Highway 91 in the area. The Project was found to have an adverse indirect visual effect on the historic Arrowhead Trail Highway because the Project would create some visual contrast as seen from the road. The indirect impacts on this site would be addressed under an MOA (refer to Master Response 7: Impacts to Recreation), but could remain

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						adverse. Refer to Master Response 7: Impacts to Recreation for information on the Valley of Fire State Park. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. The Project would not affect the scenic quality of Valley of Fire State Park. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and this species does not regularly use the site.
C5-5	9/4/2019	Bundorf, Judy	--	Wildlife, Migratory Birds, and Special Status Species	The Muddy Mountains, immediately adjacent to the 11,000 acres targeted to be industrialized by photovoltaic solar panels, presently hosts a thriving herd of sheep.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and this species does not regularly use the site.
C5-6	9/4/2019	Bundorf, Judy	--	Wildlife, Migratory Birds, and Special Status Species	The Nevada Department of Wildlife (NDOW) issues the largest number of sheep tags in the state in the Muddy Mountains Unit. The grasslands and shrubs in the area provide grazing for the sheep at certain times of the year. The impact of construction and operation of a large industrial facility, part of which will cover sheep grazing habitat, will undoubtedly cause a reduction in herd size and range. Lower numbers of sheep will result in loss of hunting opportunities, which in turn reduces the fees collected by NDOW.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and this species does not regularly use the site.
C5-7	9/4/2019	Bundorf, Judy	--	Wildlife, Migratory Birds, and Special Status Species	A cumulative impact on the desert bighorn to be considered is the impending closing of much of the Desert National Wildlife Refuge for military testing. The DNWR also hosts quite a number of bighorn sheep. What will be the cumulative effect to bighorn sheep numbers if the Air Force starts bombing in the DNRW, at the same time that the Muddy Mountains herd is losing much of its historic grazing area?	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and this species does not regularly use the site. The Project would not contribute to cumulative impacts on bighorn sheep.
C5-8	9/4/2019	Bundorf, Judy	--	BLM Management	The “Purpose and Need Statement” seems tailored to the developer’s needs, not the needs of the ratepayers and taxpayers of Nevada. I find it very interesting that NV Energy has, according to news reports, already signed a power purchase agreement (PPA) with the developer. Since the project has not gone through the entire NEPA process, how can everyone be so sure that the project will be approved?	Refer to the Master Response 1: Alternatives for a discussion of the BLM's purpose and need to respond to the ROW application and the consideration of environmental impacts during the NEPA process. The Applicant's objective is separately identified as to contribute approximately 690-MW of renewable energy to meet the demand in Nevada and/or California, as elaborated on page 1-1 of the Draft RMPA/EIS. Until the agency issues a ROD for a project, no action by an agency or an Applicant concerning the proposal shall be taken which would have an adverse environmental impact or limit the choice of reasonable alternatives (40 CFR 1506.1). The action alternative that will be approved in the ROD is not known at this time. The agency's preferred alternative can change between the Draft RMPA/EIS and Final RMPA/EIS. The ROD is required to identify the approved action and the environmentally preferable alternative (40 CFR 1505.2(b)). The approved action is not required to be the environmentally preferable alternative. The Project cannot be built if an action alternative is not approved (if for example, the No Action Alternative is approved), whether or not the applicant has a PPA.
C5-9	9/4/2019	Bundorf, Judy	--	Project Description	How can the developer guarantee a certain output? History of renewable projects over the past ten years indicates that estimated outputs are based on extremely optimistic estimates. Even with the proposed battery storage, there is no guarantee that Mother Nature will provide the same amount of sunshine that estimates are based on.	The 7,100-acre (2,873-hectare) requirement for a 690-MW solar facility utilizes the 10-acre/MWac (4-hectare/MWac) requirement published in the National Renewable Energy Laboratory report on Land-Use Requirements for Solar Power Plants in the United States (NREL 2013). The 10-acre/MWac (4-hectare/MWac) requirement would require approximately 6,900 acres (2,792 hectares) for a 690-MW facility. Because the Project includes other facilities apart from the solar arrays (O&M building, access roads, fencing, etc.), 7,100 acres (2,873 hectares) was determined as the

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						<p>minimum acreage in order to conservatively size the Project site to ensure 690-MW output.</p> <p>The objective of the Project is to produce approximately 690-M; however, this number is approximate and the actual output during operation of the Project may differ. The battery system is intended to store energy during periods of excess generation to store power until a later period when energy demand increases. The impacts of the NEPA analysis are based primarily on the maximum footprint needed for a 690-MW PV solar plus battery facility. This will be the maximum allowable footprint of development should the Project be approved.</p>
C5-10	9/4/2019	Bundorf, Judy	--	BLM Management	<p>Is the “need” due to the fact that the Crescent Dunes Thermal Solar Project near Tonopah is failing to provide adequate output to meet NV Energy’s Portfolio Standard for 2018, and likely not 2019 either (See August 23, 2019, article by Daria Sokolova in the Pahrump Valley Times). Crescent Dunes Solar can be considered the “poster child” for wildly optimistic estimates of output from renewable energy technology.https://pvtimes.com/tonopah/crescent-dunes-solar-energy-plant-earnings-drop-sharply-innevada-74269/Recent passage of legislation in Nevada increasing the renewable portfolio standard (RPS) is, I suppose, also considered a “need”. Unless our legislators can repeal the laws of physics, this ill-planned legislation will result in more public lands destruction, and much higher electricity rates for Nevada residents. Unfortunately, our legislature is following the California Model when it comes to renewable energy requirements, which has resulted in California ratepayers paying some of the highest electricity rates in the nation.</p>	<p>Refer to the Master Response 1: Alternatives for a discussion of the BLM's purpose and need to respond to the ROW application and the consideration of environmental impacts during the NEPA process. The Applicant's objective is to contribute approximately 690-MW of renewable energy to meet the demand in Nevada and/or California, as elaborated on page 1-1 of the Draft RMPA/EIS. Refer also to the Response to Comment C5-9 regarding output and what was considered under NEPA.</p>
C5-11	9/4/2019	Bundorf, Judy	--	Recreation	<p>The easiest access to Valley of Fire State Park from Las Vegas or Utah is from Interstate 15 on Valley of Fire Road to the west entrance of the park. The rapidly increasing population in the Las Vegas Valley, plus the increasing numbers of tourists visiting our state, both groups of whom are more and more enjoying outdoor recreation, have already tested the capacity of Red Rock Canyon National Recreation Area. More people, both locals and tourists, will venture to the Valley of Fire State Park to recreate. How will they be accommodated during the construction phase of a project this massive, which will no doubt use the road to the park to access much of the work?</p>	<p>Refer to Master Response 7: Recreation for information on why the Project would not impact access during construction and why the Project would not impact Valley of Fire State Park.</p>
C5-12	9/4/2019	Bundorf, Judy	--	Transportation	<p>Who will repair the damage to the road, which is designed to accommodate passenger car traffic, not heavy construction equipment? Will the county or state be left holding the bag when the road has to be repaved? Nationwide, renewable energy developers have destroyed local roads and then left local governments to pick up the tab for repairs or replacement.</p>	<p>As discussed in page 3-162 of the Draft RMPA/EIS and detailed in Appendix H, MM TRA-2 requires pre- and post-construction road condition assessments and restoration of roadways damaged during and after Project construction. The Applicant is responsible for restoring damaged roadways within 60 days after the completion of construction to a pre-construction condition, based on the pre-construction road condition assessment, or to a condition agreed upon by the Applicant and the roadway owner.</p>
C5-13	9/4/2019	Bundorf, Judy	--	Air Quality and Climate Change	<p>How will the developer mitigate the dust that will result from clearing (or mowing)11,000 acres? I often drive by the Boulder City solar projects under construction and operational in Eldorado Valley. Whenever the wind is blowing, so is the dust. It is coming from the disturbed area where the solar panels are. Oftentimes there is no dust blowing from the playa of the Eldorado Dry Lake, but copious amounts of dust blowing from both existing and under-construction solar projects.</p>	<p>As discussed on page 3-94 of the Draft RMPA/EIS and detailed in Appendix H, MM AQ-1 requires the Dust Control and Air Quality Plan to include several fugitive dust and equipment controls to be implemented during construction. The maximum ambient concentrations for PM₁₀ and PM_{2.5} would be reduced to less than the NAAQS/SAAQS, with implementation of this mitigation measure, as shown in Table 3.9 2 on page 3-96 of the Draft RMPA/EIS. The Project would also require a Surface Area/Dust Mitigation Control Plan under Clark County Department of Air Quality and Environmental Management. Refer to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust that addresses Clark County's jurisdiction over dust control and the permitting requirements. It should also be noted that mowing would not occur over 11,000 acres (4,451 hectares) but would be limited to the mowed portion of</p>

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						the Project site, depending on the alternative. No site alternative is larger than 7,100 acres (2,873 hectares).
C5-14	9/4/2019	Bundorf, Judy	--	Socioeconomics and Environmental Justice	The Gemini project will be very near the Moapa Piute Indian Reservation. In recent years, solar projects on large tracts of land in California have resulted in a spike in the number of cases of Valley Fever (Coccidioidomycosis), both among the construction workers and any people of color (Hispanic, Pacific Islanders, Native Americans, and Blacks) who live or work near these huge dust-producing sites. Have Social Justice issues been addressed for Gemini Solar? Prevailing winds in Southern Nevada are from the southwest. As a result, dust from Gemini Solar will blow directly to the residential area of the Moapa Indian Reservation. There is a distinct possibility of Native American residents of the reservation contracting illnesses attributable to the dust from a project the magnitude of Gemini. Attached are two documents with more information about Valley Fever.	The commenter's concerns are noted. The Applicant will implement BMPs for dust control, including wetting down areas that will be graded to avoid dust becoming airborne. Refer to page 3-171 of the Draft RMPA/EIS for a discussion of impacts associated with valley fever, "MM AQ-1 requires the development and implementation of a Dust Control and Air Quality Plan, which would reduce fugitive dust and minimize the risk to workers of contracting valley fever." Dust generation during operation of the facility for the All Mowing and the Hybrid Alternatives would be less than baseline conditions, as shown on Table 3.9-6 on page 3-100 and Table 3.9-8 on page 3-102. Impacts would not be adverse due to the low incidence of valley fever in the region and the dust control requirements for the Project. Section 3.15: Socioeconomics and Environmental Justice analyzes impacts related to socioeconomics and environmental justice.
C5-15	9/4/2019	Bundorf, Judy	--	Alternatives	Cost of power produced. One of the oft-used promotions for renewable energy is that it is so low in cost. However, given that the large-scale industrial projects cost millions of dollars to build, or in the case of Crescent Dunes Solar, billions of dollars to construct, it is difficult to believe that the output, even if the sunshine is free, can possibly be cheaper than our present power produced by natural gas. An article dated August 30, 2019, by Bailey Schulz, in the Las Vegas Review Journal shows that retail lectricity price in Nevada in 2009 was 11.18 cents per kilowatt hour. In 2018, the price had dropped to 9.56 cents per kilowatt hour. https://www.reviewjournal.com/business/nevada-electricityprices-fell-significantly-over-last-10-years-1837361/ As noted in the article, the drop in price is due to the power being generated by natural gas, and not due to renewable energy.	The cost of the power generated from the facility is outside the scope of the NEPA analysis. Cost is considered in terms of feasibility under the alternatives analysis, but consideration of cost is limited to what is reasonably feasible to undertake. Refer to the footnote on page 2-7 of the alternatives Report, incorporated by reference into the Draft RMPA/EIS, which states, "Economic feasibility does not cover speculation about an Applicant's costs or profit. It refers to whether the implementation of the alternative is likely given past and current practice and technology."
C6-1	7/20/2019	Cantrell, Ann	--	Alternatives	I am a proponent of solar energy, however, it should not be built on environmentally sensitive public lands. Solar panels belong on every public building in this country, not concentrated in an area which creates a death zone for birds and destroys habitat for desert plants and critters.	Master Response 1: Alternatives provides additional information on why distributed generation was not considered. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises and threecorner milkvetch individuals. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of how impacts of birds with solar panels (and other components) were addressed in the Draft RMPA/EIS. MM WILD-7 requires an avian monitoring plan that is specific to the facility. The plan is available with the Final RMPA/EIS.
C7-1	6/13/2019	Cao, Diana	--	Alternatives	Solar power should be placed on roofs and parking lots, not endangered tortoise habitat. Donot destroy natural endangered tortoise habitat.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, and the reasons why they were dismissed. Distributed generation was considered in the alternative screening process but dismissed. Master Response 1: Alternatives also provides additional information on the alternatives' evaluation process. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and to potentially reduce some of the impacts or severity of impacts on desert tortoises. Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise and native vegetation, respectively.

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C8-1	8/18/2019	Castro, Reatha	--	Vegetation and Jurisdictional Waters	I am emailing you to ask that you reconsider this area for your plans...the construction of this area would damage important plants and animals... Without these plants and animals the environment could be harmed dramatically....please find it in yourself to think on this...This planet is relying on us...the human race to make the RIGHT decisions... Thank you for your time...	The adverse impacts of the Proposed Action on plants and animals and other resources are disclosed throughout the Draft RMPA/EIS. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and to potentially reduce some of the impacts or severity of impacts on desert tortoises, should they reoccupy the mowed areas of the solar site.
C9-1	6/14/2019	Cepielik, Jeff	--	Threatened, Endangered, and Candidate Species	1) The area was closed to multiple use under the ruse of protecting the desert tortoise. Now it seems those thoughts and worries are being shelved and the habitat and original concerns for that area are being disregarded in order to allow development of a solar farm? Does that not seem like an odd situation? Close an area that has been open to the public forever, to satisfy an endangered species and special interests, only to now ignore the original reason the area was closed to now allow a larger special interest access to develop the area for profit...	The Project area is not closed to multiple use, as defined under FLPMA, nor has the area been closed to recreation and general public use. The BLM has not designated the Project site specifically for tortoise conservation.
C9-2	6/14/2019	Cepielik, Jeff	--	Socioeconomics and Environmental Justice	2) Based on the efficiency of the Primm NV project and their environmental impact at that site: We hope those facts were taken into consideration and part of the process for this and any further solar development. it is a sad fact that a majority of these projects have proven themselves ineffective, costly and serve only to make these special interests that are developing these sites money.	It is unclear to which facts about the efficiency and environmental impact of the Primm NV Project (i.e., the Solar Electric Generating System) the commenter is referring. A more specific response, therefore, cannot be provided. Environmental impacts were addressed per the requirements of NEPA on this Project, which included addressing the construction, operation, and maintenance of a 690-MW solar facility with battery storage.
C9-3	6/14/2019	Cepielik, Jeff	--	Recreation	3) The people who have recreated in these areas and that continue to bring substantial income to the state have been forgotten by the BLM in their mad dash to lease and close our once open public areas. This specific area was closed based on certain decisions and now those decisions are seemingly being overruled in a move that brings profit into the department while the needs of the community, state and others is being overlooked.	Refer to Master Response 7: Recreation regarding impacts to recreational access to recreational facilities in the region. Since impacts to recreation are not expected to be substantial, the associated economic benefits of recreation also are not expected to be adversely affected.
C10-1	9/4/2019	Chester, Thomas L.	--	Vegetation and Jurisdictional Waters	Of the four alternatives that BLM has offered for the site, the other three would involve risky schemes to convert mostly undisturbed public land into a veritable industrial solar monoculture, irrevocably damaging terrain, vegetation, and wildlife.	The Draft RMPA/EIS analyzed impacts to environmental resources and identified mitigation measures in Appendix H to reduce or minimize effects on biological resources. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises and threecorner milkvetch. Master Response 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise and native vegetation, respectively.
C10-2	9/4/2019	Chester, Thomas L.	--	Vegetation and Jurisdictional Waters	To turn our economy away from oil, gas, and coal toward renewable sources, large-scale projects like Gemini are not only unnecessary, they are the equivalent of solar strip-mining the desert.	The Draft RMPA/EIS analyzed impacts to environmental resources and identified mitigation measures in Appendix H to reduce or minimize effects on biological resources. The mowing alternatives were devised to allow for some protection of desert habitat, and to potentially reduce some of the impacts or severity of impacts on desert species, including desert tortoise (should they successfully reoccupy the mowed areas) and threecorner milkvetch individuals.
C10-3	9/4/2019	Chester, Thomas L.	--	Alternatives	Rather than creating monstrous facilities like those proposed in the three Gemini alternatives, we need to bring solar down to a human scale with photo-voltaic arrays and water-heating panels on individual homes and existing businesses. Widespread adoption of solar by citizens and businesses would create many times more energy than scores of huge projects like Gemini.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, and the reasons why they were dismissed. Distributed generation was considered in the alternative screening process but dismissed. Master Response 1: Alternatives also provides additional information on the alternatives' evaluation process.

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C10-4	9/5/2019	Chester, Thomas L.	--	Alternatives	Moreover, such small-scale projects would involve more citizens directly in solar energy development, and such projects would create many more jobs, particularly for small businesses, boosting the economy across the nation.	Refer to Response to Comment C10-3.
C11-1	6/12/2019	Clark, John	--	Recreation	It should be noted that the Valley of Fire is one of the most spectacular and highly-visited Nevada State Parks, and having 7100 acres of land dedicated to a nearby solar array would destroy the scenery as well as the excitement that tourists and residents feel while driving off the highway towards this beautiful area.	Refer to Master Response 7: Recreation for information on why the Project would not impact the Valley of Fire State Park and the short-term impacts while driving along Valley of Fire Road near I-15. The Draft RMPA/EIS acknowledges adverse visual impacts in the immediate vicinity of the solar facility along Valley of Fire Road.
C11-2	6/12/2019	Clark, John	--	Alternatives	Nevada has millions of acres of desert that could be used, so I have to wonder why this specific site was chosen? Could it not be located near the California border where other solar plants are already located and the area designated for such use?	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.
C12-1	8/22/2019	Conlin, Carin	--	Threatened, endangered, and candidate species	The desert tortoise in the SW United States is threatened already & the Gemini Solar Project threatens the ability for the desert tortoise population to recover at all.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on tortoise, the approach to the alternatives since no locations within the Recovery Unit are available for distant translocation, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation.
C13-1	6/14/2019	Dages, Jeffrey M.	--	Threatened, endangered, and candidate species	I am opposed to any solar projects in the Valley of Fire areas! This solar project will do irreparable harm to the desert tortoise as well as other animal inhabitants.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation.
C13-2	6/14/2019	Dages, Jeffrey M.	--	Native American Concerns	This location will also have an impact of the sacred lands of the Paiute Indians and Valley of Fire State Park.	Refer to Master Response 7: Impacts to Recreation for information on the Valley of Fire State Park and why the Project would not result in impacts to the park. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. Through consultation with the Moapa Band of Paiutes, one of the cultural sites found during surveys has been identified as a TCP. Other places in the Project area, such as the Muddy Mountains and Arrow Canyon Range, are noted on page 3-134 and in Appendix F as important to the Southern Paiute and specifically the Moapa Band of Paiutes. The Moapa Band of Paiutes has not identified any other specific areas within the Project site or area of religious importance to either the consulting survey team led by A.J Thompson of Knight and Leavitt, nor during Section 106 government-to-government consultations with the BLM. The archival records searches, conducted through the NVCRIS, the Nevada SHPO, and the Southern Nevada Archaeological Archive Database, did not reveal any other locations of significance.
C13-3	6/14/2019	Dages, Jeffrey M.	--	Wildlife, Migratory Birds, and Special Status Species	Besides being unsightly the heat generated will do harm to the flora and fauna of the pristine area.	Solar panels are designed to absorb solar energy, not reflect solar energy back into the atmosphere. The solar panels are generally opaque and would shade the ground below as they track across the sky. During the day, the solar panels are not expected to result in an increase in heat beneath them that could adversely impact plants and wildlife (Suuronen, Munoz-Escobar, et al. 2017). However, a Long-Term Monitoring Plan will be implemented that will assess the vegetation and its function and health in the mowed

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						areas of the facility. Refer to Master Response 2: Mojave Desert Tortoise for more information on how solar panels affect temperature.
C13-4	6/14/2019	Dages, Jeffrey M.	--	Old Spanish National Historic Trail	This will permanently damage historic trails and camp sights along the proposed solar areas.	Section 3.12: Cultural Resources of the Draft RMPA/EIS analyzes indirect effects on the only historic camp in the area, a railroad construction camp. The Project was found to have an adverse indirect visual effect on the historic, NRHP-eligible railroad construction camp site, because the Project would create some visual contrast as seen from the camp. The indirect impacts on this site would be addressed under the MOA and HPTP being developed to address adverse effects on these NRHP-recommended eligible sites (refer to Master Response 5: Old Spanish National Historic Trail). Master Response 5: Old Spanish National Historic Trail provides a summary of the OSNHT impact analysis and mitigation.
C13-5	6/14/2019	Dages, Jeffrey M.	--	Alternatives	Please consider Apex as this location would be better suited do to its proximity to the city and it already has power lines near by.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. The gen-tie lines for the Project would be less than 5 miles in length. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.
C14-1	7/20/2019	Dang, Larisa	--	Alternatives	I personally don't understand how undisturbed land is prime location for new development when there already exists disturbed habitats from previous developments that could be used for future developments	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.
C14-2	7/20/2019	Dang, Larisa	--	Alternatives	along with the fact that Las Vegas is ripe with under-utilized roofs that could also be used for solar farms in the form of parking garages, casinos, shopping centers, etc, it's baffling we have to look to currently inhabited space rich with desert wildlife diversity.	Master Response 1: Alternatives provides additional information on why distributed generation was not considered. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises and threecorner milkvetch individuals.
C14-3	7/20/2019	Dang, Larisa	--	Alternatives	moving the project to an existing solar energy zone or to already-disturbed lands identified by the EPA's RE-Powering America's Land initiative.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. Previously disturbed sites were considered and are not available at this scale. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.
C14-4	7/20/2019	Dang, Larisa	--	Vegetation and Jurisdictional Waters	studying the potential impacts of the vegetation mowing process on desert soils and plants, to include the likelihood that such mowing will lead to more non-native species taking root (can the native species even use these as a food resource?).	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas. MM VG-1 includes numerous provisions to reduce the spread of invasive species during the construction and operation of the facility.
C14-5	7/20/2019	Dang, Larisa	--	Threatened, Endangered, and Candidate Species	evaluating the claims that desert tortoises will be able to thrive on the site after vegetation is mowed, soils are compacted, non-native plants take root, and solar panels are installed. The BLM's environmental analysis currently ignores how these negative impacts are likely to make it impossible to reintroduce desert tortoises or other wildlife to the site (translocations have yet to be proven a viable option for desert tortoises, translocation efficacy remains inconsistent).	Refer to Master Response 2: Mojave Desert Tortoise regarding the mowing alternative, the impacts from that alternative on desert tortoise, reintroduction, and translocation. Refer specifically to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance, including juvenile tortoises. Additional desert tortoise protection measures would be required to reduce effects during O&M, as

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						identified in the Project-specific Biological Opinion and Incidental Take Permit." The measures that directly address and protect all tortoise during operations and maintenance. The master response also provides a discussion of the mowing methods proposed, acknowledging it is a new method and adverse effects, and the long-term monitoring that will be employed. The findings of numerous studies have found that use of translocation of desert tortoise has not had deleterious effects, ranging from mortality to changes in habitat use by resident tortoises, as explained further in Master Response 2: Mojave Desert Tortoise (under Tortoise Translocation).
C14-6	7/20/2019	Dang, Larisa	--	Threatened, Endangered, and Candidate Species	Evaluating how construction of the massive solar project could risk genetic linkages across the desert tortoise's range (will this project create or decrease necessary corridors for genetic diversity necessary for species survival?).	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM have reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS. Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this Project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.
C14-7	7/20/2019	Dang, Larisa	--	Wildlife, Migratory Birds, and Special Status Species	Evaluating the potential impact of this project on golden eagle and desert bighorn sheep foraging habitat. Bighorn and golden eagles have been known to traverse these wildlands.	As discussed on page 3-71 of the Draft RMPA/EIS and in the Golden Eagle Survey Report available with the Draft RMPA/EIS, golden eagles are known to nest in the mountains from 2 to 10 miles (3 to 16 kilometers) from the Project site. Direct effects on migratory birds, including golden eagles, during Project construction and operation could occur from habitat disturbance and loss. Approximately 20 million acres (8 million hectares) of habitat is available within the larger Mojave ecoregion (BLM 2014), including the mountain ranges directly north and south of the Project site. Construction and development of the solar facility and gen-tie lines would result in the loss of approximately 7,097 acres (2,872 hectares) of valley foraging habitat; the impact would be locally significant due to the size of the site but regionally minor. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and they do not regularly use the site.
C14-8	7/20/2019	Dang, Larisa	--	Vegetation and Jurisdictional Waters	No aspect of the project should be allowed to jeopardize habitat for listed species. In addition to the desert tortoise, the endangered threecorner milkvetch has a range that is limited.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise. These impacts disclosed in the RMPA/EIS will be considered when the BLM makes the decision to approve or deny the ROW application.

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C15-1	8/18/2019	Davidson, James	--	Threatened, endangered, and candidate species	I think it is absolutely ridiculous to continue to destroy desert areas for solar projects. And to top it off desert tortoise habitat.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The action alternatives identified by the BLM for this Project would involve mowing the vegetation and allowing tortoise to reoccupy the Project site. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as “disk and roll” or “traditional development methods”). This would allow for a portion of the native vegetation to remain. When construction is complete, the security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas. While the habitat would be altered, the purpose of the alternative is to allow for tortoise reoccupation of the area.
C15-2	8/18/2019	Davidson, James	--	Alternatives	Use the roof tops, use the parking lots, but do not use desert areas that support plants and animals.	Master Response 1: Alternatives provides additional information on why distributed generation was not considered. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises and threecorner milkvetch individuals.
C16-1	7/20/2019	Decker, Andrew	--	Alternatives	There are many better places to install solar panels. Nevada has plenty of untapped rooftops, parking lots, and already-disturbed lands where we can generate clean energy without sacrificing wildlands. The Gemini Solar project will line the pockets of utility company investors and the project developer, but ignore opportunities for average citizens to cut down their own utility bills through net-metering.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Master Response 1: Alternatives provides additional information on the alternatives’ evaluation process. The profits of the developers and utility providers is outside of the scope of NEPA analysis.
C16-2	7/20/2019	Decker, Andrew	--	Alternatives	This company should not be given a free pass. The developer wants to build the Gemini Solar project on public lands outside of designated solar energy zones. The BLM previously established areas deemed fit for utility-scale solar energy where there would supposedly be fewer impacts on wildlife and recreation opportunities. The Gemini Solar project will not be built in one of those designated solar zones.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. No other solar energy zones are located in Clark County. Master Response 1: Alternatives provides additional information on the alternatives’ evaluation process. Master Response 1: Alternatives (under the Off-Site Alternatives) describes this Solar PEIS's relevancy to the Project.
C16-3	7/20/2019	Decker, Andrew	--	Wildlife, Migratory Birds, and Special Status Species	The 11 square mile project will be built on wildlands that host an incredible diversity of desert plants and animals. In addition to desert tortoises, there are burrowing owls, kitfox, badgers, loggerhead shrike, LeConte's thrasher, cactus wren, phainopepla, and lesser nighthawks. Bighorn sheep are known to pass through and forage on the wildlands, and a significant portion of the rare threecorner milkvetch plant's known habitat would be lost or imperiled. The BLM's own environmental analysis has determined that this project will have significant impacts on wildlife.	The Draft RMPA/EIS analyzed impacts to desert tortoise, rare plants, general wildlife species, including American badger, burrowing owl, bighorn sheep and kit fox, and migratory birds, including loggerhead shrike, LeConte's thrasher, cactus wren, phainopepla, and lesser nighthawk from implementation of the Proposed Action and the alternatives. Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive plants and animals. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBCS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss

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						of habitat and vegetation, which would be somewhat reduced through mowing as part of the action alternatives. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. All of these impacts disclosed in the Draft RMPA/EIS and mitigation will be considered when the BLM makes the decision to approve or deny the ROW application. Master Responses 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise, bighorn sheep and migratory birds, and threecorner milkvetch and native vegetation, respectively.
C16-4	7/20/2019	Decker, Andrew	--	Threatened, Endangered, and Candidate Species	The company misleadingly promises to relocate tortoises back to the project site after construction. Arevia Power suggests that vegetation mowed down to accommodate construction will re-grow underneath the solar panels and allow for tortoises to co-habitat on the industrial-scale project site. See below for why this is misleading and will put wildlife at increased risk.	Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities . The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS.
C16-5	7/20/2019	Decker, Andrew	--	Alternatives	If this project must be built on public lands, then the BLM should consider moving the project to an existing solar energy zone or to already-disturbed lands identified by the EPA’s RE-Powering America’s Land initiative.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. Previously disturbed sites were considered and are not available at this scale. Master Response 1: Alternatives provides additional information on the alternatives’ evaluation process.
C16-6	7/20/2019	Decker, Andrew	--	Vegetation and Jurisdictional Waters	The BLM should more fully study the potential impacts of the vegetation mowing process on desert soils and plants, to include the likelihood that such mowing will lead to more non-native species taking root.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas. MM VG-1 includes numerous provisions to reduce the spread of invasive species during the construction and operation of the facility.
C16-7	7/20/2019	Decker, Andrew	--	Threatened, Endangered, and Candidate Species	The BLM should more carefully evaluate the claims that desert tortoises will be able to thrive on the site after vegetation is mowed, soils are compacted, non-native plants take root, and solar panels are installed. The BLM's environmental analysis currently ignores how these negative impacts are likely to make it impossible to reintroduce desert tortoises or other wildlife to the site.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. Tracked vehicles and mowers would not be used in the solar facility once tortoise reoccupy the site unless the provisions identified in the Biological Assessment (and Biological Opinion) to avoid impacts are met. Soils would not be compacted and non-native plants would be treated through various measures described in MM VG-1 in Appendix H. These effects were addressed in the Draft RMPA/EIS on page 3-85 through 3-90 and elaborated on further in the Biological Assessment, included as an

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						<p>Appendix to the Final RMPA/EIS. The Draft RMPA/EIS also adequately disclosed on page 3-90 that "Desert tortoise habitat over the entire solar facility acreage of 7,062 (2,858 hectares) would be eliminated, but tortoises could reoccupy up to 65 percent of the site when vegetation returns. However, it is not known whether reoccupation would be successful."</p> <p>While the Draft RMPA/EIS acknowledged that the outcome of reoccupation is not known. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the reduced potential severity of impacts afforded by the mowing should tortoise successfully occupy the solar, where such potential for reoccupation is not possible under the Proposed Action. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise, particularly related to mowing.</p>
C16-8	7/20/2019	Decker, Andrew	--	Threatened, Endangered, and Candidate Species	The BLM's analysis should also more thoroughly evaluate how construction of the massive solar project could risk genetic linkages across the desert tortoise's range.	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM have reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS.</p> <p>Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.</p>
C16-9	7/20/2019	Decker, Andrew	--	Wildlife, Migratory Birds, and Special Status Species	The BLM's analysis should more thoroughly evaluate the potential impact of this project on golden eagle and desert bighorn sheep foraging habitat. Bighorn and golden eagles have been known to traverse these wildlands.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for information on impacts to golden eagle habitat and for a discussion of why bighorn sheep would not be impacted by the Project.
C16-10	7/20/2019	Decker, Andrew	--	Vegetation and Jurisdictional Waters	No aspect of the project should be allowed to jeopardize habitat for the endangered threecorner milkvetch. The plant's range is limited, and it does not make sense to risk the survival of a species to install solar panels that can just as easily generate electricity on rooftops.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise. These impacts disclosed in the RMPA/EIS will be considered when the BLM makes the decision to approve or deny the ROW application. Refer to Master Response 1: Alternatives regarding rooftop solar and why it is not considered a viable NEPA alternative.
C17-1	6/9/2019	Doucet, Denise	--	Vegetation and Jurisdictional Waters	I feel that the Gemini Solar Project should go forward as part of that future. Of course, the construction should be done with a minimum disruption to wildlife and plant life in the area and any damage should be restored. This should be in the development and construction costs with a full environmental impact survey. That being said, we know this will have a much lower overall impact long term than any oil or gas well would.	This commenter's support for the Project is acknowledged. The Project is subject to a NEPA process to identify and disclose impacts to inform the decision whether or not to grant this ROW. The BLM will decide to approve or deny the application based on the NEPA analysis and other considerations. Impacts are addressed in the RMPA/EIS per the requirements of NEPA. The Draft RMPA/EIS includes mitigation measures

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						that would be implemented during construction of the Project to reduce or minimize impacts.
C18-1	8/19/2019	Fawke, Jane	--	Threatened, endangered, and Candidate Species	Please reconsider another site for this solar project. The area is in an important wildlife linkage area as well as desert tortoise habitat.	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project.</p> <p>Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM has reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS.</p> <p>Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.</p>
C19-1	7/24/2019	Fitch, Lindsay	--	Alternatives	I have been a proponent of solar energy for years, but, it shouldn't be built on environmentally sensitive public lands. I've dreamed of our leaders finally deciding to put solar panels on every public building in this country, and not concentrated in an areas which destroy the area for all the native creatures that live there, animals and plants alike. I don't believe that making things easier for the power companies to make a profit should come first in our decision making. Change always happens, especially involving finance. Where would we be if we still rode horses? Let's get those solar panels onto the rooftops of our city buildings and parking lots!	<p>Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative.</p> <p>The profits of the developers and utility providers is outside of the scope of NEPA analysis. Refer to the footnote on page 2-7 of the Alternatives Report, incorporated by reference into the Draft RMPA/EIS, which states, "Economic feasibility does not cover speculation about an Applicant's costs or profit. It refers to whether the implementation of the alternative is likely given past and current practice and technology."</p>
C20-1	7/20/2019	Flores, Michele	--	Alternatives	Please pick somewhere to do your solar project.	It is assumed the commenter meant "somewhere else." Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process and additional information on the alternatives' evaluation process.
C20-2	7/20/2019	Flores, Michele	--	Threatened, Endangered, and Candidate Species	Please don't take away the only place turtles orc any other animal have to live. They are innocent. Please. These are gods creatures... thank you for reading my message. God bless	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation.
C21-1	8/27/2019	Fodor, Steve	--	Alternatives	It frustrates me every time I see a solar project that is built on wide open desert land knowing that there are hundreds of square miles of rooftops and parking lots nearby, and closer to where the electricity is needed. it is heartbreaking to see humanity unnecessarily destroy sensitive, unique land when other options are available, options that build on already developed lands.	Master Response 1: Alternatives provides additional information on why distributed generation was not considered. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process and Master Response 2: Mojave Desert Tortoise provides additional information on desert tortoise.

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C22-1	8/1/2019	Fulmer, Garren Lee	--	Cultural Resources	I wanted to know if the proposed solar area will impact the 1914-1924 Historic Arrowhead Trail route?	The Project would not directly impact the Historic Arrowhead Trail route. Section 3.12: Cultural Resources in the Draft RMPA/EIS analyzes indirect effects on the historic Arrowhead Trail Highway/Old Highway 91 in the area. The Project was found to have an adverse indirect visual effect on the historic Arrowhead Trail Highway, because the Project would create some visual contrast as seen from the road. The indirect impacts on this site would be addressed under an MOA (refer to Master Response 5: Old Spanish National Historic Trail), but could remain adverse.
C23-1	9/5/2019	Ghiglieri, Dennis	--	Threatened, Endangered, and Candidate Species	The proposed action and the 2 mowing "alternatives" appear to have substantially similar negative impacts to the Desert Tortoise and sensitive desert plants.	Refer to Master Response 1: Alternatives (under Scientific Study) for a discussion of the alternatives considered and how the mowing alternatives were considered for their potential to reduce the severity of effects caused by the Proposed Action, should successful reoccupation of mowed areas occur. The Draft RMPA/EIS appropriately acknowledges the potential for adverse effects and the loss of habitat from the alternatives; however, the degree of impact is considerably reduced as compared with the Proposed Action. Successful reoccupation of the solar field after construction must be disclosed as uncertain but the potential for success and, thus, reduced impacts to tortoise is much greater than for the Proposed Action where approximately 215 adult tortoises and 900 or more juvenile tortoises would be subject to mortality take. The alternatives, therefore, include considerable differences in the severity of impact and as such, are sufficiently different and adequate under NEPA. The All Mowing and the Hybrid Alternatives do have similar impacts on desert tortoise and rare plants. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS. The impacts from the Hybrid Alternative are greater to rare plants than the All Mowing Alternative because rare plant habitat is coincident with the traditional development areas that remain under this alternative. Mitigation is proposed in Appendix H, under MM VG-2 to reduce effects in this alternative, including the use of drive and crush instead of disk and roll in modeled threecorner milkvetch habitat. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise associated with the Proposed Action and action alternatives.
C23-2	9/5/2019	Ghiglieri, Dennis	--	Alternatives	Also, there are no alternatives that look at the designated Solar Energy zones extensively analyzed by the BLM in 2012 that did minimize impacts to desert habitat and dependent wildlife.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed, including in SEZs, during the alternative screening process. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process and Master Response 2: Mojave Desert Tortoise provides additional information on desert tortoise.
C23-3	9/5/2019	Ghiglieri, Dennis	--	Threatened, Endangered, and Candidate Species	Further, the BLM's DEIS offers no scientific evidence that mowing would mitigate the loss of desert tortoise nor allow the mowed desert plants such as creosote to even survive the extensive mowing with heavy machinery during construction and thereafter every 5 years. The mowing alternatives appear to be "straw men" intended to deflect the reviewing public from what will likely be complete extirpation of the desert tortoise on the 7,100 acres and unknown negative impacts to desert tortoise on surrounding public lands. The impact identified by the BLM of loss of 215 adult tortoises and as many as 900 juveniles should eliminate this site from further consideration.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. Tracked vehicles and mowers would not be used in the solar facility once tortoise reoccupy the site unless the provisions identified in the Biological Assessment (and Biological Opinion) to avoid impacts are met. Soils would not be

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						<p>compacted and non-native plants would be treated through various measures described in MM VG-1 in Appendix H. These effects were addressed in the Draft RMPA/EIS on page 3-85 through 3-90 and elaborated on further in the Biological Assessment, included as an Appendix to the Final RMPA/EIS. The Draft RMPA/EIS also adequately disclosed on page 3-90 that "Desert tortoise habitat over the entire solar facility acreage of 7,062 (2,858 hectares) would be eliminated, but tortoises could reoccupy up to 65 percent of the site when vegetation returns. However, it is not known whether reoccupation would be successful."</p> <p>While the Draft RMPA/EIS acknowledged that the outcome of reoccupation is not known. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the reduced potential severity of impacts afforded by the mowing should tortoise successfully occupy the solar, where such potential for reoccupation is not possible under the Proposed Action. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise, particularly related to mowing.</p>
C23-4	9/5/2019	Ghiglieri, Dennis	--	Threatened, Endangered, and Candidate Species	The BLM's DEIS appears to ignore the serious downward trend of the desert tortoise in the Mojave as documented in the August 2018, Population Trends in Mojave Desert Tortoises(<i>Gopherus Agassizii</i>)† which concludes:"... Prevailing declines in the abundance of adults overall and in four of the five recovery units indicate the need for more aggressive implementation of recovery actions and more critical evaluation of the suite of future activities and projects in tortoise habitat that may exacerbate ongoing population declines." (emphasis added) The study found that between 2004 and 2014 there was a decline over 130,000 adult desert tortoises with an Dennis overall downward trend of juveniles.	Page 3-80 of the Draft RMPA/EIS discusses the densities in the Northeastern Mojave Recovery Unit, which is the only recovery unit of the five with increasing populations of desert tortoises (USFWS 2015), as well as the average density the CHUs within the Northeastern Mojave Recovery Unit. The study identified by the commenter also acknowledges the increase within this recovery unit (Allison and McLuckie 2018), in agreement with the 2015 USFWS document. The Biological Assessment for the Project provides considerable supplemental information on desert tortoise habitat, connectivity, corridors, ACECs, CHUs, and linkages that expands on the information provided in the Draft RMPA/EIS.
C23-5	9/5/2019	Ghiglieri, Dennis	--	Vegetation and Jurisdictional Waters	All the alternatives in the DEIS create many miles of cleared public land for roads, utilities, fencing and other access which seriously fragment Mojave Desert habitat in what is now undisturbed public lands.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals and to reduce some of the impacts or severity of impacts on desert tortoises. The Draft RMPA/EIS identified mitigation measures to reduce or minimize impacts to desert habitat. Master Responses 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise and native vegetation, respectively.
C23-6	9/5/2019	Ghiglieri, Dennis	--	Wildlife, Migratory Birds, and Special Status Species	In addition, the DEIS alternatives will have short and long-term impacts to birds because of the project and the panels will present a continuing hazard to migrating birds.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for how impacts of birds with solar panels (and other components) are addressed. MM WILD-7 requires an avian monitoring plan that is specific to the facility. The BBCS and ABMMP are available with the Final RMPA/EIS. Section 3.3 Adaptive Management of the ABMMP identifies the procedures to undertake if monitoring shows substantial impacts to birds and bats.
C23-7	9/5/2019	Ghiglieri, Dennis	--	Alternatives	<p>The DEIS analysis and/or alternatives ...</p> <ul style="list-style-type: none"> fail to provide a complete range of alternatives including alternatives which avoid desert tortoise habitat 	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Master Response 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise and native vegetation, respectively.

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C23-8	9/5/2019	Ghiglieri, Dennis	--	Alternatives	The DEIS analysis and/or alternatives fail to analyze sites that would avoid impacts to desert tortoise and other desert animals	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered in compliance with NEPA, and how the mowing alternatives were considered for reducing severity of effects to desert tortoise of the Proposed Action.
C23-9	9/5/2019	Ghiglieri, Dennis	--	Cumulative	The DEIS analysis and/or alternatives fail to analyze cumulative impacts that likely will result from expected and easily anticipated energy projects	Cumulative impacts were addressed throughout the Draft RMPA/EIS for the Proposed Action and action alternatives. Refer to Section 3.0.4 on page 3-1 of the Draft RMPA/EIS for the requirements for cumulative impacts analyses. Known projects, including energy projects (e.g. cumulative projects #7, #8, #19) must be addressed but speculative projects are not considered under NEPA. The Southern Bighorn Solar Project and Storage Center has been included in the Final RMPA/EIS, but its addition does not change the outcome of the analyses of cumulative impacts. Any future proposal, particularly on BLM-managed lands, will need to undergo its own NEPA process and assess cumulative impacts.
C23-10	9/5/2019	Ghiglieri, Dennis	--	Vegetation and Jurisdictional Waters	The DEIS analysis and/or alternatives fail to provide scientific studies to support the mowing alternative as a proven technique to mitigate impacts to wildlife and its desert habitat	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and adverse effects, and the long-term monitoring that will be employed to understand if it is successful and to employ adaptive management, as needed.
C23-11	9/5/2019	Ghiglieri, Dennis	--	Vegetation and Jurisdictional Waters	The DEIS analysis and/or alternatives fail to provide scientific studies to support that public land subjected to mowing would not become infested with exotic weeds	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and adverse effects, and the long-term monitoring that will be employed to understand it is success. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas. MM VG-1 includes numerous provisions to reduce the spread of invasive species during the construction and operation of the facility.
C23-12	9/5/2019	Ghiglieri, Dennis	--	Wildlife, Migratory Birds, and Special Status Species	The DEIS analysis and/or alternatives fail to avoid habitat for the threecorner milkvetch found only in southeastern Nevada and northwestern Arizona	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including areas eliminated from the alternatives to reduce impacts to threecorner milkvetch.
C23-13	9/5/2019	Ghiglieri, Dennis	--	Old Spanish National Historic Trail	The DEIS analysis and/or alternatives fail to avoid the historic Old Spanish Trail	Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the extant NRHP-eligible Old Spanish Trail segment and Projects impacts as well as the new mitigation. Mitigation, including avoiding the segment, would not avoid adverse effects on the OSNHT. Because the OSNHT in the Project area is considered a corridor that spans the entire valley, it is impossible to minimize or avoid effects to the setting of the OSNHT and to develop the Project. Mowing preserves several of the individual values important to the trail, including the natural resources such as the vegetation, hydrology, and wildlife, but cannot minimize the impacts to the visual setting. Additional OSNHT mitigation has been added to the Final RMPA/EIS.

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C24-1	8/31/2019	Gonzales, Shaun	--	BLM Management	The purpose and need statement must be revised to focus on the BLM’s purpose and need, and not the objectives of the applicant.	Refer to the Master Response 1: Alternatives for a discussion of the BLM's purpose and need to respond to the ROW application and the consideration of environmental impacts during the NEPA process. The Applicant's objective is separately identified and is to contribute approximately 690-MW of renewable energy to meet the demand in Nevada and/or California, as elaborated on page 1-1 of the Draft RMPA/EIS.
C24-2	8/31/2019	Gonzales, Shaun	--	Alternatives	The BLM should issue a supplemental Draft RMPA/EIS to include action alternatives that provide the decisionmaker a clear basis for choice among options that sharply define the issues, to include a reduced footprint alternative and to assess an alternative location on BLM lands.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why an alternative location on BLM land and a reduced footprint alternative were not carried forward for analysis. Master Response 1: Alternatives provides additional information on the alternatives’ evaluation process.
C24-3	8/31/2019	Gonzales, Shaun	--	Cumulative	The BLM should issue a supplemental Draft RMPA/EIS to include two additional reasonably foreseeable developments in its analysis of cumulative impacts.	The Arrow Canyon Solar Project was included under a previous name (the Moapa Solar Energy Center, cumulative project #7) in the Draft RMPA/EIS. The Southern Bighorn Solar Project and Storage Center was not proposed at the time of the Draft RMPA/EIS. This project has been included in the Final RMPA/EIS, but its addition does not change the outcome of the analyses of cumulative impacts.
C24-4	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	The BLM should issue a supplemental Draft RMPA/EIS that takes a hard look at the likely impacts of construction, operations and maintenance on desert tortoise linkage habitat identified by the Fish and Wildlife Service.	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM have reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS. Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.
C24-5	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	The BLM should issue a draft supplemental EIS that incorporates existing knowledge and studies regarding desert tortoise habitat requirements into its assessment of the potential to reintroduce tortoises onto the project site after completion of construction.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and adverse effects, and the long-term monitoring that will be employed. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise including any adaptive management to address if methodologies are unsuccessful, as USFWS deems appropriate.
C24-6	8/31/2019	Gonzales, Shaun	--	Vegetation and Jurisdictional Waters	The BLM should issue a draft supplemental EIS that examines the potential for repeated herbicide applications on the project site to negative impact special status plant habitat downstream over the life of the project.	Refer to Master Response 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a detailed description of herbicides and how the use of herbicides was addressed throughout the Draft RMPA/EIS. The impacts of herbicide use on special status plants were addressed throughout the Draft RMPA/EIS (e.g. page 3-48, page 3-49, page 3-50, page 3-55).

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						Refer to page 3-37 of the Draft RMPA/EIS, which stated "Dust palliatives and herbicides can mobilize into stormwater and cause downstream water quality impacts. To minimize those impacts, MM WR-2 requires a Stormwater Quality Monitoring Program that involves using BLM-approved dust palliatives, periodically testing stormwater quality to verify that impacts are not occurring, and making changes to the applications that minimize effects if identified. The program would specify the testing procedures for stormwater quality, frequency, constituents tested, and reporting requirements, including the agencies to which the results must be reported. If standards for water quality are exceeded, the monitoring program requires modification to the palliative use in consultation with BLM." Since stormwater would be monitored at the site and adjustments made to the use of herbicides, if needed, the commenter's stated off-site concerns over impacts should not occur.
C24-7	8/31/2019	Gonzales, Shaun	--	Wildlife, Migratory Birds, and Special Status Species	The BLM should issue a supplemental Draft RMPA/EIS that takes a hard look at whether or not the project could foreclose future opportunities to restore connectivity for bighorn sheep across Interstate-15.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project.
C24-8	8/31/2019	Gonzales, Shaun	--	Old Spanish National Historic Trail	The BLM should issue a supplemental Draft RMPA/EIS to incorporate accurate assessments of the project's impacts on the natural setting within the Congressionally-designated Old Spanish National Historic Trail corridor.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C24-9	8/31/2019	Gonzales, Shaun	--	BLM Management	The purpose and need statement in the Draft RMPA/EIS contains elements of the applicant's purpose and need. According to BLM's NEPA Handbook, "[t]he purpose and need statement for an externally generated action must describe the BLM purpose and need, not an applicant's or external proponent's purpose and need (40 CFR 1502.13)." As written, the Draft RMPA/EIS purpose and need statement adopts the applicant's claimed project requirements to build a facility with a 690 megawatts capacity on no less than 7,100 acres in Clark County, Nevada. According to the EIS: "The Project would include a solar generation power plant and ancillary facilities on approximately 7,100 acres (2,873 hectares) of BLM land in Clark County, Nevada, that would produce approximately 690-megawatts alternating current (MWac), as described in the POD (Solar Partners, XI, LLC 2019)." – Section 1.2 of the Draft RMPA/EIS, Purpose and Need By including the applicant's objectives or requirements in the BLM's purpose and need, the BLM may unnecessarily narrow its analysis of alternatives. While agencies enjoy "considerable discretion" to define the purpose and need of a project. (Friends of Southeast's Future v. Morrison, 153 F.3d 1059, 1066 (9th Cir. 1998)), "an agency cannot define its objectives in unreasonably narrow terms." (City of Carmel-By-The-Sea v. United States Dep't. of Transp., 123F.3d 1142,1155 (9th Cir. 1997)). The purpose and need statement should be revised to remove the generation capacity, acreage, and specific location, and to include other BLM purposes. Those other BLM purpose and needs include managing lands according to the Las Vegas Resource Management Plan (RMP) and protecting wildlife and recreation values.	Refer to the Master Response 1: Alternatives for a discussion of the BLM's purpose and need to respond to the ROW application and the consideration of environmental impacts during the NEPA process. The Applicant's objective is separately identified and is to contribute approximately 690-MW of renewable energy to meet the demand in Nevada and/or California, as stated on page 1-1 of the Draft RMPA/EIS. BLM's purpose and need does not involve stipulating the size or MW of the Project, but the size and MW are included in the ROW application that the BLM must respond to.
C24-10	8/31/2019	Gonzales, Shaun	--	Alternatives	BLM should issue a supplemental Draft RMPA/EIS to include analysis of additional alternative locations and a reduced footprint alternative. The current range of alternatives are arbitrarily limited by the purpose and need statement that adopts the applicant's objectives as the BLM's own, and also does not provide decisionmaker a reasonable set of choices given the resource conflicts identified in the Draft RMPA/EIS. The BLM Manual requires analysis of "those alternatives necessary to permit a reasoned choice." Regarding analysis of alternatives, 40 CFR 1502.14 states: "[b]ased on the information and analysis presented in the sections on the Affected Environment (§ 1502.15) and the Environmental Consequences (§ 1502.16), it should present the environmental impacts of the proposal and the alternatives in	Refer to Master Response 1: Alternatives for a discussion of the alternatives considered and how the mowing alternatives were considered for reducing severity of effects of the Proposed Action and for additional information on the alternatives' evaluation process. The Draft RMPA/EIS appropriately acknowledges the potential for adverse effects and the loss of habitat from the mowing alternatives; however, the degree of impact is reduced as compared with the Proposed Action. Successful reoccupation of the solar field after construction must be

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					comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.” Similarly, courts have also found that an EIS should contain information sufficient to permit a reasoned choice of alternatives so far as environmental aspects are concerned. (Natural Resources Defense Council v. Morton, 458 F.2d 827 (D.C. Cir. 1972)) The current Draft RMPA/EIS presents action alternatives that involve mowing or do not involve mowing. As explained below, there are no significant differences across the action alternatives in their impacts on the affected environment and environmental consequences.	disclosed as uncertain but the potential for success and, thus, reduced impacts to tortoise is greater than for the Proposed Action where approximately 215 adult tortoises and approximately 900 or more juvenile tortoises would be subject to mortality take. The alternatives, therefore, include differences in severity of impact and as such, are sufficiently different and adequate under NEPA. Master Response 2: Mojave Desert Tortoise provides additional information on the differences in alternatives.
C24-11	8/31/2019	Gonzales, Shaun	--	Alternatives	The Draft RMPA/EIS appears to present the mowing construction technique as a comparatively different alternative. However, the mowing technique is unlikely to provide substantial relief from two key environmental consequences of the action alternatives – impacts on the desert tortoise and the threecorner milkvetch.	<p>The mowing alternatives were devised to specifically reduce impacts to desert tortoise as compared with the Proposed Action. The Draft RMPA/EIS appropriately acknowledges the potential for adverse effects and the loss of habitat from the mowing alternatives; however, the degree of impact is reduced as compared with the Proposed Action. Successful reoccupation of the solar field after construction must be disclosed as uncertain but the potential for success and, thus, reduced impacts to tortoise is much greater than for the Proposed Action where approximately 215 adult tortoises and approximately 900 or more juvenile tortoises would be subject to mortality take. The alternatives, therefore, include differences in severity of impact and as such, are sufficiently different and adequate under NEPA. Master Response 2: Mojave Desert Tortoise provides additional information on the differences in alternatives.</p> <p>Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provides additional information on the impacts to threecorner milkvetch, including to seed banks, and explains mitigation to potentially reduce impacts in threecorner milkvetch modeled habitat areas.</p>
C24-12	8/31/2019	Gonzales, Shaun	--	Alternatives	A draft supplemental EIS should evaluate a reduced footprint alternative, consistent with Department of Interior practice. According to Department of Interior guidance (IM 2011-059), “reduced project footprint/MW” alternatives are among those typically included in environmental analysis. The Gemini Solar Draft RMPA/EIS does not include any assessment of a reduced footprint alternative that could be configured to reduce impacts on sensitive wildlife species. Such alternative analysis would be consistent with the BLM’s own and actual purpose and need, to include objectives in its own resource management plan (as described further below). Instead, the alternative analysis is clearly constrained by the inclusion of the applicant’s objectives and interests in the purpose and need statement because a reduced footprint would not allow for the construction of a facility with a generation capacity at 690MW on 7,100 acres. In order to ensure that action alternatives are comparative and are “sharply defining the issues and providing a clear basis for choice,” the reduced footprint alternative should be designed to, at a minimum, avoid all lands identified by the Fish and Wildlife Service as desert tortoise priority 1 linkage habitat.	<p>Refer to Master Response 1: Alternatives for a discussion of the alternatives considered and how the alternatives that were considered for full analysis differ. The CEQ and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals.</p> <p>While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.</p>
C24-13	8/31/2019	Gonzales, Shaun	--	Alternatives	As explained below, the “mowed” portions of the project site are unlikely to provide suitable habitat for the desert tortoises. Therefore, the BLM must evaluate the Hybrid Alternative as likely to significantly impede upon priority 1 tortoise linkage habitat. Most of these lands fall within the southern portions of areas B and D.	<p>Refer to Master Response 2: Mojave Desert Tortoise for a discussion of the mowed portions of the site and the potential for tortoise occupation of these areas. While it is not habitat, tortoise could reoccupy these. Should successful reoccupation occur, impacts to desert tortoise individuals and the population should be reduced.</p> <p>Master Response 2: Mojave Desert Tortoise also explains the Project's relationship to priority linkages under the Solar PEIS; the role of USFWS during the ongoing Section 7 consultation for this project in determining connectivity impacts and other impacts to tortoise, and mitigation; and how connectivity impacts were assessed in the Draft RMPA/EIS and Biological Assessment. The portions of B and D with high tortoise densities are</p>

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						identified for mowing under the Hybrid and All Mowing Alternatives. Tortoise could move through mowed areas as the fencing will be lifted, allowing for connectivity.
C24-14	8/31/2019	Gonzales, Shaun	--	Alternatives	The reduced footprint alternative should, at a minimum, also eliminate areas C because of the significant presence of threecorner milkvetch on that portion of the project. Additionally, the southern portion of areas B and D contain denser populations of Nye milkvetch and threecorner milkvetch. These portions of should also be removed for the reduced footprint alternative.	<p>The Hybrid and All Mowing Alternatives eliminate the area of threecorner milkvetch individuals found in development area C, as shown in Figure 2-19 and 2-22 compared with Figure 2-3 of the Proposed Action, shown in Appendix D.</p> <p>Few individuals or occurrences (four total) of threecorner milkvetch were found in development area D. Nye milkvetch were found in development area D. The area where these occurrences were found is within the mowed areas under the Hybrid Alternative. Mowing would reduce impacts by maintaining soils and likely seed banks. The areas referenced by the commenter are not included in the All Mowing Alternative. Refer to the aforementioned figures in Appendix D.</p>
C24-15	8/31/2019	Gonzales, Shaun	--	Alternatives	The alternative locations evaluated should be expanded to consider BLM-administered lands elsewhere in Nevada, outside of Clark County. Neither the BLM's purpose and need nor the applicant's objectives require the project to be located in Clark County. The Draft RMPA/EIS arbitrarily limits the analysis of alternatives sites to Clark County, even though the project proponent signed a power purchase agreement with a Nevada utility that could allow it to generate energy and tie into the grid anywhere in the state. I would specifically urge the BLM and project proponent to consider an analysis of an alternative that sites the project in the Millers Solar Energy Zone. According to the Department of Interior, the Millers Solar Energy Zone in Nevada contains sufficient acreage to accommodate the full or any reduced acreage configurations of the Gemini Solar project.	<p>Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. The feasibility evaluation for alternatives also required identifying areas that reduced the need for new transmission. Because of the proximity to Las Vegas, available transmission capacity is primarily in Clark County. Off-site considerations also focused on transmission capacity and the need to minimize new transmission lines.</p> <p>The Millers Solar Energy Zone does not appear to have any pending applications. Transmission lines/transmission capacity appears to be limited. A 120-kilovolt (kV) line is available in the area, with an unknown capacity. The Solar PEIS also acknowledges this limitation and potential effects. The 2014 Solar PEIS states on page 11.7-3 that with regards to the Millers Solar Energy Zone, "Availability of transmission from SEZs to load centers will be an important consideration for future development in SEZs. The nearest existing transmission line is a 120-kV line that runs through the SEZ. It is possible that this existing line could be used to provide access from the SEZ to the transmission grid, but the 120-kV capacity of that line would be inadequate for 1,492 to 2,686-MW of new capacity (note that a 500-kV line can accommodate approximately the load of one 700-MW facility). At full build-out capacity, it is clear that substantial new transmission and/or upgrades of existing transmission lines would be required to bring electricity from the proposed Millers SEZ to load centers; however, at this time the location and size of such new transmission facilities are unknown." This SEZ is very far from load centers. This area, therefore, was not a feasible alternative as it would likely require the construction of extensive new high-voltage transmission, which can create expansive visual impacts, dust impacts, habitat impacts, weed vector impacts, and more.</p>
C24-16	8/31/2019	Gonzales, Shaun	--	Alternatives	The Department of Interior's Solar Programmatic EIS expressly established several Solar Energy Zones (or designated leasing areas) as ideal locations for utility-scale solar projects on public lands. Yet there is no consideration of a Solar Energy Zone in the Draft RMPA/EIS or the Alternatives Report posted on the BLM's website. The alternative locations considered were outside of Solar Energy Zones, and they were discarded because they conflicted with Fish and Wildlife Service-designated priority 1 and priority 2 desert tortoise linkage habitat. Ironically, the preferred alternative for the Gemini Solar project also overlaps with priority 1 and 2 tortoise linkage habitat. The Millers Solar Energy Zone alternative would avoid this particular environmental consequence.	<p>Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in SEZs. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. No other solar energy zones are located in Clark County.</p> <p>Master Response 2: Mojave Desert Tortoise also explains the Project's relationship to priority linkages under the Solar PEIS; the role of USFWS</p>

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						<p>during the ongoing Section 7 consultation for this project in determining connectivity impacts and other impacts to tortoise, and mitigation; and how connectivity impacts were assessed in the Draft RMPA/EIS and Biological Assessment. The portions of B and D with high tortoise densities are identified for mowing under the Hybrid and All Mowing Alternatives. Tortoise could move through mowed areas as the fencing will be lifted, allowing for connectivity.</p> <p>Refer to Response to Comment C24-15 regarding the Millers Solar Energy Zone.</p>
C24-17	8/31/2019	Gonzales, Shaun	--	Cumulative	<p>The BLM should issue a supplemental EIS to include more thorough evaluation of cumulative impacts in light of NV Energy’s signing of power purchase agreements with two additional, large-scale solar projects in the vicinity of the Gemini Solar project. according to press, NV Energy signed deals with the 200 MW Arrow Canyon Solar project and the 300 MW Southern Bighorn Solar project, both to be located on the nearby Moapa Band of Paiutes Indian Reservation. ii It does not appear that neither of these projects is included in Table 3.0-2. These projects should be incorporated into the analysis of cumulative impacts, with a particular focus on whether any of them could further impede on desert tortoise connectivity habitat, threecorner and Nye milkvetch habitat, or potential opportunities to restore desert bighorn sheep connectivity across Interstate-15.</p>	<p>The Southern Bighorn Solar Project and Storage Center was not proposed or had not been announced at the time of the Draft RMPA/EIS. This project has been added to the Table 3.0-2, Figure 3.0-2, and Figure 3.0-2 and considered in the analysis of the Final RMPA/EIS, where relevant. The addition of this project to the cumulative project list does not change the desert tortoise or special status plant cumulative analysis as written. The Arrow Canyon Solar Project was previously named the Moapa Solar Energy Center (cumulative project #7). Additional information about the status has been added to Table 3.0-2. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and this species does not regularly use the site. Refer to Master Response 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on desert tortoise and threecorner milkvetch and Nye milkvetch, respectively.</p>
C24-18	8/31/2019	Gonzales, Shaun	--	BLM Management	<p>The Las Vegas RMP, Objective SS-2 directs that the BLM shall “[m]anage habitat to further sustain the populations of Federally listed species so they would no longer need protection of the Endangered Species Act.” And Objective SS-3 of the RMP stipulates that BLM shall “[m]anage desert tortoise habitat to achieve the recovery criteria defined in the Tortoise Recovery Plan (USFWS 1994) and ultimately to achieve delisting of the desert tortoise.” However, the preferred alternative of the Gemini Solar project disregards the Department of Interior’s own guidance and scientific input regarding how to best ensure the recovery of the Federally listed desert tortoise.</p>	<p>Refer to Master Response 2: Mojave Desert Tortoise for a discussion of the ACECs, the high-quality habitat in the Project area, consultation with USFWS regarding the specific impacts of this Project, the consistency of the Project with the Tortoise Recovery Plan, and the USFWS's need to make a conclusion.</p> <p>Refer to Master Response 1: Alternatives for a discussion of the mowing alternatives and disclosure of associated impacts, as well as the reduced potential severity of desert tortoise impacts compared to the Proposed Action. Successful reoccupation and reduced impacts to tortoise connectivity could occur under the mowing alternatives, whereas neither would occur under the Proposed Action. The consistency of the Project with the 1998 Las Vegas RMP will be determined at the ROD.</p>
C24-19	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	<p>A review of the current Draft RMPA/EIS indicates that BLM did not give a “hard look” at the potential impacts of the proposed Gemini Solar project on the desert tortoise because it under estimates the likelihood that the project could impact habitat connectivity across the desert tortoise’s range. Specifically, on page 122 of Volume I of the Draft RMPA/EIS, the BLM states that “[c]onstruction, O&M, and decommissioning of the Project would not result in indirect effects on Critical Habitat for desert tortoise or any primary constituent elements due to the distance to these areas and the very limited connectivity that currently exists between the Project site and the Critical Habitat.” However, as explained below, the entirety of the Gemini Solar project would negatively impact lands identified by the Fish and Wildlife Service as important to the survival and resilience of the desert tortoise.</p>	<p>The statement in the Draft RMPA/EIS as quoted by the commenter is correct as written. CHU's are not located in areas that have genetic connectivity to the Project site. The Biological Assessment for the Project provides considerable supplemental information on desert tortoise habitat, connectivity, corridors, ACECs, CHUs, and linkages that expands on the information provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for information on desert tortoise connectivity and the role of the USFWS during the ongoing Section 7 consultation for this Project.</p>
C24-20	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	<p>The Gemini Solar project is anticipated to directly and negatively impact as many as 260 desert tortoises, and also destroy habitat designated by the US Fish and Wildlife Service as priority 1 and priority 2 linkage corridors for the desert tortoise. iii A substantial portion of development areas B and D fall within priority</p>	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS</p>

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					1 linkage habitat, and the remaining development areas fall within priority 2 connectivity corridors, according to analysis of geospatial data made available by the Department of Interior.	during the ongoing Section 7 consultation for this Project. Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS. The BLM have reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS. Cumulative impacts to desert tortoise, including on connectivity, were addressed in the Draft RMPA/EIS on pages 3-85 for the Proposed Action, page 3-88 for the All Mowing Alternative, and page 3-90 for the Hybrid Alternative. Impacts from known proposed solar developments were quantified.
C24-21	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	The Draft RMPA/EIS incorrectly assumes that only the fenced portions of the traditional development areas (as opposed to the mowed areas) will impede desert tortoise connectivity.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing alternatives and disclosure of associated impacts, as well as the reduced potential severity of desert tortoise impacts compared to the Proposed Action should reoccupation occur, whereas it would not occur under the Proposed Action. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise, particularly related to mowing. The master response also provides additional information on how the mowing alternatives have a reduced degree of impact to desert tortoises compared to the Proposed Action.
C24-22	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	As explained further below, neither the mowed nor traditional development areas are likely to provide suitable habitat for desert tortoises, and the entirety of the project site should be considered a significant impediment on tortoise linkage habitat.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and the long-term monitoring that will be employed. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise including any adaptive management to address if methodologies are unsuccessful, as USFWS deems appropriate. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise, particularly related to mowing.
C24-23	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	The draft supplemental EIS should subsequently revise its determination that the pinch point would be 2.5 miles wide (page 3-89, Volume I). Again, this determination appears to assume that the mowed project areas in the hybrid alternative will not be fenced. Again, as explained in sections of this letter further below, a supplemental Draft RMPA/EIS should consider the likelihood that the entirety of the project site will be fenced, and therefore the pinch point will be much narrower. The image above depicts the Gemini Solar project site, with Fish and Wildlife Service Priority 1 desert tortoise linkage habitat in yellow, and Priority 2 linkage habitat in orange.	The analysis of the pinch point is accurate in the Draft RMPA/EIS. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise, particularly related to mowing. The fencing will be lifted such that tortoise can travel under and through the mowed areas of the site. The alternative does not include an option of fully fencing off mowed areas. The analysis of the pinch point with a full fence is applicable to the Proposed Action and was analyzed as such on page 3-83 of the Draft RMPA/EIS, where it states, "The southern end of development area D is approximately 1 mile (1.6 kilometers) from the Muddy Mountains (since tortoise habitat is limited to the valley and not the mountains) and would create a pinch-point for tortoise migration in a northeast/southwest direction past that point. Reduced connectivity through the larger area

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						<p>would result in increased localized densities, reduced gene pool flow, and increased stressors that could affect survival of tortoises. These effects would be considered adverse." This scenario; however, would not apply to the All Mowing Alternative or the Hybrid Alternative, as long as successful reoccupation of the mowed areas occurs.</p> <p>Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS. The BLM have reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and BA, available with the Final RMPA/EIS.</p>
C24-24	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	<p>Research increasingly indicates that the linkage habitat that would be negatively impacted by the Gemini Solar project are of importance to the survival of the desert tortoise. According to a letter submitted to the Fish and Wildlife Service by the Desert Tortoise Council and Defenders of Wildlife, “[e]xisting data support the theory that desert tortoises exist in meta populations, whereas the recovery plan assumed populations were more evenly distributed over large areas. In contrast, metapopulation theory is that desert tortoises are distributed in patches based on habitat suitability, which are connected by linkages or corridors that allow individuals to move to and from patches. Since desert tortoises exist in metapopulations, habitat linkages between them need to be protected to sustain overall abundance and healthy populations across the landscape.” v This is based in part on the Desert Tortoise Recovery Plan Assessment. vivii</p> <p>According to research published in 2018, the ongoing decline in desert tortoise populations is almost certainly compounded by the loss and fragmentation of habitat that will undermine the species’ resilience, including by renewable energy projects:</p> <p>“The impact of the many smaller land use conversions (habitat loss) have not been compiled, but this and the small scale of habitat restoration projects (habitat gain) have been dwarfed by the scale of habitat conversion from military exercises, renewable energy facilities, and catastrophic fire. Habitat loss would also disrupt the prevailing population structure of this widely distributed species with geographically limited dispersal (isolation by distance; Murphy et al. 2007; Hagerty and Tracy 2010). Demographic connection with nearby local populations has enabled repopulation of at least one area after a local die-off of tortoises (Germano and Joyner 1988). We therefore anticipate an additional impact of this habitat loss is decreasing resilience of local tortoise populations by reducing demographic connections to neighboring populations (Fahrig 2007).”viii</p> <p>These studies further underscore the BLM’s responsibility to more fully evaluate the project’s potential impacts on the desert tortoise, and to consider additional action alternatives that reduce or eliminate the Gemini Solar project’s incursion on key linkage habitat.</p>	<p>The priority linkages apply to projects subject to the ROD for the Solar PEIS. The ROD and Solar PEIS does not apply to this Project since the ROW application pre-dates the Solar PEIS as discussed in Master Response 1: Alternatives. Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise connectivity and assessment of impacts and the role of USFWS during the ongoing Section 7 consultation for this project in determining connectivity impacts and other impacts to tortoise, and mitigation. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM have reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the BA and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. While the management criteria under the ROD for the 2014 Solar PEIS with respect to priority linkages do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment. In the mowing alternatives, tortoise could move through mowed areas, as the fencing would be lifted, allowing for connectivity.</p> <p>Cumulative impacts to desert tortoise, including connectivity, were addressed in the Draft RMPA/EIS on pages 3-85 for the Proposed Action, page 3-88 for the All Mowing Alternative, and page 3-90 for the Hybrid Alternative. Impacts from known proposed solar developments were quantified. While impacts from "many small conversions" are not quantified in the analysis, cumulative impacts are described, appropriately, as adverse. The analysis is then focused on the Project's contribution to an otherwise adverse cumulative impact on desert tortoise and habitat connectivity.</p>
C24-25	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	<p>The Draft RMPA/EIS significantly underestimates the project’s impact on the desert tortoise in part because it assumes that the majority of tortoises found on the project site will be reintroduced to mowed areas after completion of construction. As explained in sections above, this assumption likely also skews</p>	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and adverse effects, and the long-term monitoring that will</p>

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					the draft's assessment of the project's impact on desert tortoise linkage corridors. The Draft RMPA/EIS appears to contain faulty analysis based on inaccurate or incomplete information regarding the post-construction viability of habitat on the mowed project site.	<p>be employed. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise including any adaptive management to address if methodologies are unsuccessful, as USFWS deems appropriate.</p> <p>Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM has reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS.</p> <p>Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.</p>
C24-26	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	The analysis is also contradicted by multiple studies regarding the impact of vehicle activity on Mojave Desert soils and vegetation. The BLM should issue a supplemental EIS to take a hard look at the extent to which the mowed areas of the preferred alternative will actually be able to sustain desert tortoise populations after construction is complete.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for a description of the operations and maintenance under the mowing alternatives, and the protections afforded desert tortoise to minimize impacts, as described in the Draft RMPA/EIS and the BA (included as an appendix to the Final RMPA/EIS). Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise, particularly related to mowing.
C24-27	8/31/2019	Gonzales, Shaun	--	Alternatives	The BLM's own characterization and analysis of the hybrid alternative is contradictory. The BLM claims that as many as 183 desert tortoises (the majority of tortoises directly impacted by the project) will be reintroduced to the mowed areas after construction is complete, and the remainder will be translocated. (Draft RMPA/EIS, Alternatives Report, page 2-24) This presents the decisionmaker a misleading sense that the preferred alternative provides a comparative choice as far as environmental consequences are concerned. However, the Draft RMPA/EIS later asserts that "[m]aintaining 4,460 acres (1,805 hectares) of vegetation within the solar facility would allow desert tortoises to reoccupy the site, but the habitat would be highly modified and the success of reoccupation in [sic] unknown; therefore, this alternative is considered to result in a loss or take of habitat." (Draft RMPA/EIS, Volume I, page 3-89) Either the site provides suitable tortoise habitat, or it does not; the Draft RMPA/EIS presently concludes both outcomes will result from the hybrid alternative.	Under the mowing alternatives, the site would not be tortoise habitat, it would be a solar facility. Leaving vegetation, soils, and hydrology intact, however, would allow tortoises the opportunity to reoccupy the area, which reduces impacts to tortoise, as it allows them the space that they need to forage and mate to maintain their population and population health. The Hybrid Alternative (and All Mowing Alternative), while altering the habitat, still potentially reduces effects to tortoise and their populations by maintaining elements of the habitat that can support tortoise survival (vegetation, soils, shade, burrows). Master Response 2: Mojave Desert Tortoise provides additional information on desert tortoise impacts from each alternative.
C24-28	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	These and other statements contained in the Draft RMPA/EIS strongly suggest that the BLM has not taken a hard look at 1.) the direct impacts that mowing activities will have on the quality of the desert tortoise habitat remaining on the mowed project site , 2.) the potential for noxious weeds to spread as a result of mowing, 3.) the potential for long-term erosion on the project site to impact soils and vegetation, 4.) the impacts of solar panels on soil moisture, 5.) the impact desert tortoises of prolonged exposure to herbicides, and 6.) and the impacts of multiple relocations on desert tortoises.	<p>All issues raised by the commenter were addressed in the Draft RMPA/EIS and supplemented with information in the Biological Assessment, included as an appendix to the Final RMPA/EIS. Each of the commenter's points are addressed below:</p> <p>1) Page 3-88, which states, "Desert tortoise habitat over the entire solar facility acreage of 7,115 (2,879 hectares) would be eliminated, but tortoises could reoccupy the site when vegetation returns. However, it is not known whether reoccupation would be successful." Mowing would not maintain habitat but would allow for tortoises to reoccupy the site where they could</p>

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						<p>torage, burrow, and mate. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and adverse effects, and the long-term monitoring that will be employed. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise including any adaptive management to address if methodologies are unsuccessful, as USFWS deems appropriate.</p> <p>2) The potential for spread of invasive weeds associated with the Project and impacts on rare plants are analyzed in Section 3.6: Vegetation and Jurisdictional Waters of the Draft RMPA/EIS. Measures to protect rare plant species and conduct invasive weed control were provided in Appendix H of the Draft RMPA/EIS, under MM VG-2 and MM VG-1. The mowing alternatives also reduces these impacts from invasive species spread and on rare plants as native vegetation would be maintained on-site. Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provides additional information on invasive plants/weeds.</p> <p>3) Erosion is addressed in the Drainage Study and from stormwater flowing overland was addressed on page 3-22 of the Draft RMPA/EIS. As stated on page 3-36, "MM GS-1 in Section 3.3: Geology, Soils, and Mineral Resources requires erosion control and bank stabilization devices to be installed in and around on-site and off-site washes (subject to appropriate permits). The measure also requires routine site inspections to identify and repair areas of erosion such as deep rills and gullies in the panel arrays and to maintain, change, or add additional erosion control features if needed (in accordance with required permits). Mitigation would minimize the adverse impacts of erosion and scour from increased site flows and flooding across the solar facility."</p> <p>4) A study of a solar facility where grasses were present beneath the panels found that areas under PV solar panels maintained higher soil moisture throughout the period of observation, with a water efficiency of over 300 percent compared to non-panel areas (Adeh, Selker and Higgins 2018). The exact effects on soil moisture in the native desert vegetation are not known, but soil moisture is not anticipated to be negatively impacted by the Project in mowed areas under the alternatives. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) Comparing the Project to another site would not be possible. The Long-Term Monitoring Plan for the Project will include numerous research and monitoring objectives for desert tortoise and native vegetation, including soil moisture.</p> <p>5) The impacts of herbicide use were addressed throughout the Draft RMPA/EIS (e.g. page 3-48, page 3-49, page 3-50, page 3-55, page 3-84). Only herbicides deemed safe for desert tortoise would be used in mowed areas. Refer to Master Response 2: Mojave Desert Tortoise (under Herbicides and Dust Palliatives).</p> <p>6) The translocations were described on page 3-86 of the Draft RMPA/EIS and the impacts assessed also on page 3-86. Refer also to Master Response 2: Mojave Desert Tortoise (under Tortoise Translocation).</p>

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C24-29	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	The draft EIS appears to draw the conclusion that the mowed project site can provide suitable desert tortoise habitat from its unsubstantiated statement that “vegetation is expected to rebound within a few years of construction, based on evidence from other Mojave Desert solar facilities where vegetation was crushed and allowed to regrow.” The Draft RMPA/EIS and the administrative record does not support this claim or describe any “evidence,” let alone whether the condition of those other sites can provide suitable desert tortoise habitat. The administrative record does not present botanical surveys or peer-reviewed studies that can characterize the conditions of those sites and whether or not they can sustain desert tortoise populations. Specifically, there is a lack of rigorous information from other sites regarding the impacts construction activity has had on the diversity of plants on those sites, and whether construction activities prompted an increase in nonnative weeds.	The quote by the commenter is referring to vegetation that would be crushed by vehicles and equipment during construction, constituting approximately 20 to 25 percent of the mowed areas. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and adverse effects, and the long-term monitoring that will be employed. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise including any adaptive management to address if methodologies are unsuccessful, as the USFWS deems appropriate.
C24-30	8/31/2019	Gonzales, Shaun	--	Project Description	There also appear to be factual errors or omissions that suggest that the draft EIS does not fully analyze the direct impacts of mowing. The draft EIS claims that "[u]p to 20 percent of the vegetation within the mowed areas would be crushed during solar array installation. " Yet, the draft does not indicate how the BLM came to conclude that 20 percent would be the upper bound of crushed vegetation, or what types of vegetation would likely be crushed.	<p>Mowing and initial construction of the solar arrays would result in some crushing of the native vegetation currently growing on the Project site. The estimated amount of crushed vegetation is 20 to 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS. Page 33 of the Biological Assessment states, "[a] rough estimate of 20 to 25 percent of the vegetation is expected to be crushed in mowed areas by tracked vehicles to bring equipment to the array areas, to mow the facility, and to construct the tracker systems." The estimate was developed based on the approximate footprint of the typical vehicles used during construction, as well as the number of passes down each solar array row likely required during installation of the solar equipment. The Draft RMPA/EIS analyzes this impact on vegetation and the indirect effects on habitat to wildlife species under the All Mowing and Hybrid Alternatives. The crushed vegetation is expected to recover over a number of years, based on evidence from other Mojave Desert solar facilities where vegetation was crushed and allowed to regrow (page 3-73 of the Draft RMPA/EIS). Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provides additional information on vegetation that would be crushed.</p> <p>Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Only hand trimming would occur once the facility is operation and would be performed from existing roads or by hand in off-road areas. Page 44 of the Biological Assessment also states, "Solar array areas constructed using mowing would need to have vegetation periodically mowed or trimmed to a height of 18 to 24 inches (46 to 61 centimeters). Vegetation under the solar arrays would be cut or trimmed by hand during panel cleaning to a height that allows the vegetation to maintain its habitat function for desert tortoise and to maintain hydrology patterns on the site while not impacting the functionality of the solar panels. It is anticipated that trimming would occur every few years but not annually."</p>
C24-31	8/31/2019	Gonzales, Shaun	--	Project Description	According to the draft EIS, “[o]ne vehicle can likely access two solar array rows at a time so approximately 8 feet (2.4 meters) of vegetation would be crushed every 40 feet (12 meters) in a worst-case scenario in the mowed areas.” This is likely inaccurate, as explained below. The draft EIS also indicates that “[m]owing and panel construction would occur using skid steer vehicles or other tracked vehicles such as loaders, skid steers, cranes, and graders (to level areas for PCSs and battery storage).” The draft EIS provides an example of the skid steer vehicle that would be used for mowing activities (Figure 2-21, below). This vehicle and similar skid steer vehicles clearly have limited reach because of their short wheel base, meaning that they would likely need to traverse a significant portion of the mowed project site in order to trim vegetation to the required height, conduct excavation activities, and carry	The estimate of 20 to 25 percent of the vegetation would be crushed in the mowed areas was developed accounting for the size of the vehicle tracks as well as the number of passes, identified in the sentence following the one quoted by the commenter. As stated on page 2-8 of the Draft RMPA/EIS, "[o]ne vehicle can likely access two solar array rows at a time so approximately 8 feet (2.4 meters) of vegetation would be crushed every 40 feet (12 meters) in a worst-case scenario in the mowed areas. From three to 10 passes are needed to install each set of solar array rows." Other types of equipment, such as cranes, would be required during installation of solar

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					material. Extending weight far from the vehicle would cause tipping. This means that in order to mow or trim a creosote bush – a shrub that is the most abundant on the Gemini Solar project site and will require the most trimming activity —the skid steer vehicle would have to make one or more passes immediately adjacent to nearly every creosote bush on the project site.	equipment and would traverse in the paths made by the equipment used to the mow the vegetation. The assumption that the equipment would be able to reach either solar array row from between the rows is generally accurate. Mowing heads on a boom arm would be able to reach up to 20 feet (6 meters) on either side of the piece of equipment. The assumption of 8 feet (2.4 meters) of crushed vegetation accounts for one set of vehicle tracks down each row accounting for the needs of the construction equipment. The language has been clarified in the Final RMPA/EIS that the area of crush assumed for the worst-case scenario accounts for the possibility of one set of vehicle tracks down each row. Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provides additional information on vegetation that would be crushed.
C24-32	8/31/2019	Gonzales, Shaun	--	Vegetation and Jurisdictional Waters	According to the draft EIS (page 3-134), over 90% of the project site is composed of the creosote bush - white burrobush shrub alliance. According to the Botanical Resources Report for the Gemini Solar project, the average density of creosotebush on the creosote bush-white burrobush alliance is 619 plants per hectare (2.47 acres) (page 26 of the Botanical Resources Report). The mowed area will be 1,805 hectares (4,460 acres).This means that skid steer vehicles will need to maneuver and closely approach nearly 1.1 million creosote bushes, because most creosote bushes grow to a height that exceeds 24 inches (the maximum height for vegetation allowed on the Gemini Solar project site).	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized. Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities . The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS. Use of these methodologies are the best development method options to allow multiple uses of public lands without permanently damaging soil seed banks, perennial vegetation, or exacerbating weeds. Creosote bush does not cover 90 percent of the Project site. It is one component of the creosote bush - white burrobush shrub alliance. Burrobush comprises 78 percent of the alliance cover in the Project area. Many, if not most of the plants in the alliance are burrobush well under 24 inches (61 centimeters) tall. Most vegetation is under 24 inches (61 centimeters) and would not need to be mowed or trimmed.
C24-33	8/31/2019	Gonzales, Shaun	--	Project Description	Furthermore, the skid steer vehicle provided as an example of typical mowing equipment likely to be used on the site has a ground clearance of 14 inches. This means that any vegetation exceeding that height that is not crushed by the vehicle's wheels will be compacted or crushed by the centerline body of the vehicle. Figure 2-21 from the Draft RMPA/EIS shows an example of the equipment that will be used to mow portions of the project site. Note the limited reach of the mulching attachment, and the 14” ground clearance.	The typical mowing equipment shown in Figure 2-21 is an example. Other similar mowing and mulching equipment may have a mower or mulcher head attached to a boom arm, which can reach up to 20 feet (6 meters) from the body of the equipment. The vegetation beneath the body of equipment used for mowing and construction may be broken at the clearance height but would not be crushed or compacted. Vegetation with broken branches would grow back faster than the crushed vegetation, which are anticipated to grow back in a number of years. Perennial vegetation like yucca may not survive and would be salvaged from areas where vegetation would be removed (i.e., equipment areas, roads) and replanted, or avoided in mowed areas per MM VG-1. Cacti are expected to resprout if trimmed to less than

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						18 to 24 inches (46 to 61 centimeters) (Refer to Section 3.6: Vegetation and Jurisdictional Waters for the full analysis).
C24-34	8/31/2019	Gonzales, Shaun	--	Project Description	The scenario in the draft EIS whereby 8 feet of vegetation is crushed for every 40 feet may be calculated for installation of solar panels and posts or based on entirely different vehicles not identified in the draft EIS. This calculation does not appear to include passes necessary for excavation of ditches for collector lines or the vehicle passes needed to mow down vegetation before posts and solar panels are installed. Based on the need to use heavy machinery for multiple passes for mowing, post installation, panel installation, and ditch excavation activities, a reasonable person would likely conclude that total ground disturbance and plant crushing is likely to be higher than 20%. Given this calculation, the BLM should more closely examine and update its estimates for the percent of vegetation that will likely be crushed during construction. The BLM should also more closely examine the number of passes that will be required by heavy machinery and, thus, the impacts on soil erosion and compaction.	Refer to Response to Comment C24-31 for the information on vegetation that would be crushed and the anticipated regrowth. Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provides additional information on vegetation that would be crushed.
C24-35	8/31/2019	Gonzales, Shaun	--	Vegetation and Jurisdictional Waters	The draft EIS needs to be revised to assess the likelihood that vehicle disturbance of the mowed site will result in more nonnative weeds and the reduction of native annuals. This will significantly reduce the availability of suitable forage for the desert tortoise and casts doubt on the BLM's plans to reintroduce tortoises to the mowed project site.	This comment is tied to Response to Comment C24-32. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and adverse effects, and the long-term monitoring that will be employed to understand it is success.
C24-36	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	A draft supplemental EIS needs to establish criteria for continuous monitoring of the availability and suitability of native forage for the desert tortoise, evaluate the potential effects of herbicide treatments on the presence of native plants over time, and also establish protocol for the translocation of desert tortoises to another location if conditions are not sufficient to sustain the tortoises on the mowed project site.	Refer also to the Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and adverse effects, and the long-term monitoring that will be employed to address the vegetation health. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan for the Project will include numerous research and monitoring objectives for desert tortoise and native vegetation. The impacts of herbicide use were addressed throughout the Draft RMPA/EIS (e.g. page 3-48, page 3-49, page 3-50, page 3-55, page 3-84). Only herbicides deemed safe for desert tortoise would be used in mowed areas, as discussed further in the master response. Refer to Master Response 2: Mojave Desert Tortoise (under Herbicides and Dust Palliatives). A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise including any adaptive management to address if mowing methods are unsuccessful, as USFWS deems appropriate.
C24-37	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	According to a study, desert tortoises are selective herbivores that rely substantially on a short list of herbaceous perennial plants or winter-spring annuals. ix According to the U.S. Geological Survey and Fish and Wildlife Service, nonnative plants pose a significant threat to the survival of the desert tortoise and can negative impact the health and growth of juvenile desert tortoises.	The potential for spread of invasive weeds associated with the Project and impacts on rare plants are analyzed in Section 3.6: Vegetation and Jurisdictional Waters of the Draft RMPA/EIS and the measures to reduce weeds are further explained in Master Response 2: Mojave Desert Tortoise (under Weeds). The mowing alternatives also reduces these impacts from invasive species spread and on rare plants as native vegetation would be maintained on-site. Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities also provides additional information on how invasive plants/weeds were addressed in the Draft RMPA/EIS.

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C24-38	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	As established in the section above, the construction activities on the mowed project area are likely to result in significant negative impacts on 1.) existing shrubs and cacti through crushing and trimming, and result in 2.) significant soil disturbance. This latter impact will probably result in the reduction of annual forbs and herbaceous perennials that tortoises need to thrive on the project site.	<p>Soil compaction in mowed areas would be minimized. The types of vehicles and equipment used would be selected to evenly distribute the weight of the machinery, reducing compaction. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, including removal and trimming of cacti as explained under Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities. The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS.</p> <p>As stated in the Draft RMPA/EIS, it is not known whether reoccupation would be successful, and impacts are identified as adverse. During O&M, mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Master Response 2: Mojave Desert Tortoise (under Scientific Study) provides additional information on mowing as a new method.</p>
C24-39	8/31/2019	Gonzales, Shaun	--	Vegetation and Jurisdictional Waters	<p>Multiple studies conclude that Off-Highway Vehicle (OHV) activity has significant and severe impacts on vegetation and the quality of soils in the Mojave Desert, which in turn impacts the mix of vegetation likely to succeed or fail. OHVs are typically lighter than and exert less ground pressure than the construction equipment likely to be used on the Gemini Solar site. According to the Draft RMPA/EIS, “A flail-type mower mounted on skids that are mounted on a low-ground pressure tractor, approximately 5 to 6 pounds per square inch (psi) (34 to 41 kilopascals), is an example of” the type of equipment that would be used for mowing. Available information indicates that the average wheeled OHV exerts 2 psi (13.8kpa) of ground pressure; less than the pressure of the equipment proposed for construction of the Gemini Solar project. xi So it is reasonable to assess that the mowing activity on the Gemini Solar project site could have equally, if not more severe impacts than those characterized in OHV studies.</p> <p>Studies of OHV activity on Mojave Desert ecosystems conclude that “[i]mportant effects of OHV activities on soils and watershed function include soil compaction, diminished water infiltration, diminished presence and impaired function of soil stabilizers (biotic and abiotic crusts, desert pavement), and accelerated erosion rates. Compacted soil inhibits infiltration of precipitation. In turn, soil moisture available to vegetation is diminished, volumes and velocities of precipitation runoff increase, and soil erosion accelerates, leading to the formation of gullies and other surface changes. Additionally, soil compaction may inhibit root growth among plants, in which case organic matter, litter, soil fertility, and vegetative cover are diminished, further exacerbating the soil’s susceptibility to erosion.”xii</p> <p>According to the same study, “[a]s the number of vehicle “passes” (one pass is the equivalent of one OHV passing over a given area one time) increases, soil bulk density and soil strength increase and permeability (as indicated by water infiltration rate) decreases (Lovich and Bainbridge, 1999). Soil compaction may become evident after only a few vehicle passes. In fact, Iverson and others (1981) found that soil bulk density increased logarithmically with the number of vehicle passes.” xiii According to a USGS report, “soil compaction affects plant growth by reducing moisture availability and precluding adequate taproot penetration to deeper soil horizons.” xiv</p> <p>Soil disturbance caused by the multiple vehicle passes is likely to result in increased spread of nonnative weeds. According to the U.S. Forest Service, red brome – one of the nonnative weeds present in the region – “becomes extremely competitive with other grasses and displaces native species.” The species thrives in “[c]ultivated and disturbed or degraded sites.”</p>	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized.</p> <p>Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities. The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS. Use of these methodologies are the best development method options to allow multiple uses of public lands without permanently damaging soil seed banks, perennial vegetation, or exacerbating weeds.</p> <p>The Draft RMPA/EIS analyzed the indirect effect of the Project on the spread and introduction of invasive plant species (refer to Section 3.6: Vegetation and Jurisdictional Waters). Extensive measures are included in MM VG-1 to remove and treat red brome and other invasive weeds on the Project site. The mowing alternatives also reduces these impacts as native vegetation would be maintained on-site. Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provides additional information on invasive plants/weeds.</p>
C24-40	8/31/2019	Gonzales, Shaun	--	Vegetation and Jurisdictional Waters	The likely spread of nonnative plant species on the mowed project site presents yet another hurdle to the reintroduction of tortoises there – the need for herbicide treatments. The Draft RMPA/EIS indicates that herbicides will be used to treat nonnative weeds that become established on the project site. Although the herbicides are not expected to have a direct harmful impact on reptiles, the herbicides are non-selective in their impacts on plants. This means that herbicide treatment could also further reduce the presence of native plants upon which the tortoise relies for forage. Some of the herbicides listed (page 2-9, Volume I)	The Draft RMPA/EIS analyzed the indirect effect of the Project on the spread and introduction of invasive plant species, as well as the effects of invasive species on desert tortoise habitat and foraging. Extensive measures are included in MM VG-1 to remove invasive weeds from the Project site. The mowing alternatives also reduces these impacts as native vegetation would be maintained on-site. Herbicide use is proposed. Refer to Master

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					are known to persist in decomposed vegetation or leach into soils after rain. Repeated herbicide treatments over time could result in a degraded presence of native plants over time.	<p>Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities and Master Response 2: Mojave Desert Tortoise for more information on use of herbicides proposed as part of the Project. The impacts of herbicide use were addressed throughout the Draft RMPA/EIS (e.g. page 3-48, page 3-49, page 3-50, page 3-55, page 3-84).</p> <p>Refer also to page 3-37 of the Draft RMPA/EIS, which stated "Dust palliatives and herbicides can mobilize into stormwater and cause downstream water quality impacts. To minimize those impacts, MM WR-2 requires a Stormwater Quality Monitoring Program that involves using BLM-approved dust palliatives, periodically testing stormwater quality to verify that impacts are not occurring, and making changes to the applications that minimize effects if identified. The program would specify the testing procedures for stormwater quality, frequency, constituents tested, and reporting requirements, including the agencies to which the results must be reported. If standards for water quality are exceeded, the monitoring program requires modification to the palliative use in consultation with BLM." Since stormwater would be monitored at the site and adjustments made to the use of herbicides, if needed, off-site impacts should not occur.</p>
C24-41	8/31/2019	Gonzales, Shaun	--	Vegetation and Jurisdictional Waters	A draft supplemental EIS should be issued that incorporates the analysis of likely soil compaction and disturbance, and the resulting mix of vegetation that is actually likely to be present on the mowed project site over time.	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized.</p> <p>Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities. The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS. Use of these methodologies are the best development method options to allow multiple uses of public lands without permanently damaging soil seed banks, perennial vegetation, or exacerbating weeds.</p> <p>As stated in the Draft RMPA/EIS on page 3-54, "[w]here vegetation is crushed, root balls would be left in place, tracked vehicles would distribute weight and minimize soil disturbance, and turns would be wide to also minimize soil disturbance. Native vegetation is expected to rebound and regrow after construction is complete." The crushed vegetation in the mowed areas is expected to recover over a number of years, based on evidence from other Mojave Desert solar facilities where vegetation was crushed and allowed to regrow (page 3-73 of the Draft RMPA/EIS). Impacts on vegetation within the mowed areas from crushing and soil</p>

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						disturbance are acknowledged in the Draft RMPA/EIS, although the effects would be considerably less than those in the traditional development areas.
C24-42	8/31/2019	Gonzales, Shaun	--	Vegetation and Jurisdictional Waters	This analysis should also take into account the likely need to repeatedly apply herbicides to address nonnative species.	Refer to Master Response 2: Mojave Desert Tortoise (under Herbicides and Dust Palliatives) for a detailed description of herbicides and how the use of herbicides was addressed throughout the Draft RMPA/EIS. The impacts of herbicide use were addressed throughout the Draft RMPA/EIS (e.g., page 3-48, page 3-49, page 3-50, page 3-55, page 3-84). Impacts to tortoise and nonnative species would be minimized.
C24-43	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	A draft supplemental EIS should evaluate the extent to which erosion and runoff patterns are likely to create conditions that further harm desert tortoises reintroduced to the site. A draft supplemental EIS should establish protocol for determining when erosion events are too widespread or negatively impact the viability of the tortoise habitat to an extent that necessitates translocation of the tortoises to another location.	Indirect effects on desert tortoise that result in habitat degradation and lower quality food sources were addressed on page 3-83 of the Draft RMPA/EIS. The analysis of erosion caused by construction and operation of the Project is presented in Section 3.3: Geology, Soils, and Mineral Resources of the Draft RMPA/EIS. Increased erosion would be greater for areas where vegetation is removed. As stated on ES-4, "the All Mowing Alternative would result in the least amount of erosion and loss of topsoil due to most of the development areas being left vegetated...Potential for adverse effects would be reduced with implementation of the SWPPP during construction and through mitigation, including erosion stabilization, during operation." Changes to water runoff patterns were analyzed in detail in Section 3.5: Water Resources of the Draft RMPA/EIS, and are further explained in Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust . Drainage patterns are anticipated to be similar to pre-Project conditions in the mowed areas as vegetation, soils, and existing washes would be left in place. As stated on page 3-40, "This alternative would reduce erosion and runoff effects, as most of the site would be left vegetated. Runoff flows would be most similar to existing conditions, and for the purposes of this analysis are assumed to be the same. MMs WR-1, WR-2, WR-3, and GS-1 would still apply to the Project to minimize effects related to erosion and flooding." The same effects would be expected in the mowed areas under the Hybrid Alternative. Tortoise would only be allowed to reoccupy mowed areas. Long-term monitoring and study will be a requirement of the Section 7 consultation and Biological Opinion. The Biological Opinion will include additional methods to address impacts to desert tortoise including any adaptive management to address if methodologies are unsuccessful, as the USFWS deems appropriate.
C24-44	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	As noted in the draft EIS (page 3-22), the BLM anticipates potentially significant erosion to occur in parts of development area B that would necessitate periodic repair activity and installation of erosion stabilization (such as riprap).	Refer to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust , which provides additional information on how erosion was addressed in the Draft RMPA/EIS. Erosion is addressed in the Drainage Study and from stormwater flowing overland was addressed on page 3-22 of the Draft RMPA/EIS. Mitigation would minimize the adverse impacts of erosion and scour from increased site flows and flooding across the solar facility." Significant erosion is not anticipated under the mowing alternatives.
C24-45	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	If desert tortoises are to be reintroduced to this portion of the project as envisioned under the Hybrid Alternative, such repair activity would necessitate tortoise surveys and temporary relocation of tortoises to reduce the potential for take.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance, including for any erosion repair, per MM GS-1 from Appendix H. The USFWS will issue a

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						Biological Opinion that includes desert tortoise protection measures required to be implemented during O&M in addition to construction.
C24-46	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	Additionally, significant erosion can impact the availability of burrows and also reduce soil nutrients needed for native plants, the tortoise's primary food source.	Refer to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust , which provides additional information on how erosion was addressed in the Draft RMPA/EIS. Erosion is addressed in the Drainage Study and from stormwater flowing overland was addressed on page 3-22 of the Draft RMPA/EIS. Mitigation would minimize the adverse impacts of erosion and scour from increased site flows and flooding across the solar facility." Significant erosion is not anticipated under the mowing alternatives. Significant erosion is not anticipated under the mowing alternatives, and thus, impact to tortoise burrows and soil nutrients is not anticipated.
C24-47	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	Although erosion can occur naturally after significant storm events in the Mojave Desert, the disturbance of soil and installation of solar panels on the Gemini Solar project site is likely to exacerbate and change the way erosion affects the project site.	Refer to Responses to Comments C24-43 through C24-46 and Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust . Significant erosion is not anticipated in mowed areas due to the maintenance of vegetation and application of erosion control measures. Master response provides additional information on erosion.
C24-48	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	A draft supplemental EIS should also consider how solar panels may interfere with soil moisture on the project site, and thus how this may impact the availability of forage for the desert tortoise over time. According to preliminary study by the Desert Research Institute, solar panels interrupt the infiltration of rainwater in the soil by funneling it into drip patterns along the edges of solar panels. "Scientists know that the panels modify how the rainwater enters the soil but they don't yet know the resultant overall change in soil moisture, a factor that can determine how suitable an environment the area is for native plants and animals." Image by the Desert Research Institute illustrating notional soil infiltration patterns on a solar project site. xv A draft supplemental EIS should also take a hard look at the potential for the runoff of precipitation from solar panels to further impact the presence of nonnative and native plant species over time. The solar panels will act as impervious surfaces that collect and channel rain. During significant storm events, the ground below the edge of each solar array could be subjected to enhanced erosion. Throughout the operation and maintenance of the project, areas directly underneath panels could see significantly lower soil moisture, reducing or altering vegetation cover.	<p>A study of a solar facility where grasses were present beneath the panels, found that areas under PV solar panels maintained higher soil moisture throughout the period of observation, with a water efficiency of over 300 percent compared to non-panel areas (Adeh, Selker and Higgins 2018). The exact effects on soil moisture in the native desert vegetation are not known, but soil moisture is not anticipated to be negatively impacted by the Project. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. The Long-Term Monitoring Plan for the Project will include numerous research and monitoring objectives for desert tortoise and native vegetation, including soil moisture.</p> <p>Following recovery of the vegetation after construction, desert tortoise could reoccupy the Project site under the Hybrid Alternative and All Mowing Alternative. However, it is not known whether reoccupation would be successful. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) that identifies that a Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan for the Project will include numerous research and monitoring objectives for desert tortoise and native vegetation, including soil moisture.</p> <p>Refer to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust, which provides additional information on how erosion was addressed in the Draft RMPA/EIS. Erosion is addressed in the Drainage Study and from stormwater flowing overland was addressed on page 3-22 of the Draft RMPA/EIS. Mitigation would minimize the adverse impacts of erosion and scour from increased site flows and flooding across the solar facility." Significant erosion is not anticipated under the mowing alternatives.</p>
C24-49	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered,	The BLM should issue a draft supplemental EIS that examines the potential impacts on desert tortoises of prolonged exposure to herbicides. Because the preferred alternative involves relocated desert tortoises to	Refer to Master Response 2: Mojave Desert Tortoise (under Herbicides and Dust Palliatives) for information on desert tortoise and herbicide use.

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				and Candidate Species	the mowed portions of the project site, and because the management plans call for periodic treatment of noxious weeds with herbicides throughout the mowed project site, herbivorous animals could be exposed to increased levels of herbicides over the life of the project. Desert tortoises relocated to the project site after construction could be exposed to levels of herbicide that are potentially toxic and may result in take of the animals over time. Herbicide treatment would likely coincide with periods of the year when the tortoises actively forage. The plan of development indicated that the developer could treat weeds at least twice a year. Tortoises could forage multiple times in the immediate aftermath of herbicide treatment, and therefore could ingest or experience dermal exposure to the herbicides multiple times each year. The applicant is unlikely to be able to control or restrict tortoise foraging behavior after applying the herbicide without frequent relocation of the animals. The Draft RMPA/EIS lists “aminopyralid, clopyralid, imazapyr, imazapic, glyphosate, metasulfuronmethyl, and rimsulfuron” as herbicides approved for use on the project site. Glyphosate, for example, is known to be moderately toxic to mammals. There are no known studies regarding the prolonged exposure of desert tortoises to glyphosate or other herbicides. However, at least one study found that a species of skink in New Zealand exhibited traits that were harmful to its survival, to include selected warmer microclimates and had slower sprint speeds, after dermal exposure.	The impacts of herbicide use were addressed throughout the Draft RMPA/EIS (e.g. page 3-48, page 3-49, page 3-50, page 3-55, page 3-84). Only herbicides deemed safe for desert tortoise would be used in mowed areas, per the existing Biological Opinion for use of herbicides on BLM lands in the District.
C24-50	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	The BLM should issue a supplemental Draft RMPA/EIS that examines the extent to which desert tortoises could be subjected to multiple relocations or take over time to accommodate operations and maintenance activities, as well as decommissioning of the project site. These activities could result in increased take of desert tortoise.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. The USFWS will issue a Biological Opinion that includes desert tortoise protection measures. The Biological Opinion will also identify the anticipated take for operations and maintenance.
C24-51	8/31/2019	Gonzales, Shaun	--	Vegetation and Jurisdictional Waters	According to the revised plan of development (POD) submitted by the applicant, “PV array washing may occur up to 24 hours per day (including nighttime panel washing), with approximately two panel washes anticipated per year.” Additionally, the applicant would mow vegetation every three years. These activities would presumably require vehicle movements and access across much of the site where BLM assumes the tortoises will be reintroduced. These vehicle and associated foot movements could increase the likelihood of take, burrow crushing, soil compaction, and disturbance. The POD also indicates that the applicant will inspect, conduct localized vegetation control, and apply herbicides at least twice a year. Presumably, more of these activities will be conducted on foot. But these activities will still add to soil compaction.	As stated in Master Response 2: Mojave Desert Tortoise , operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment. The BA, included as an appendix to the Final RMPA/EIS, states on page 44, "Solar array areas constructed using mowing would need to have vegetation periodically mowed or trimmed to a height of 18 to 24 inches (46 to 61 centimeters). Vegetation under the solar arrays would be cut or trimmed by hand during panel cleaning to a height that allows the vegetation to maintain its habitat function for desert tortoise and to maintain hydrology patterns on the site while not impacting the functionality of the solar panels. It is anticipated that trimming would occur every few years but not annually." Vehicle and equipment may travel along the defined access roads and park nearest to the location requiring maintenance activities (e.g. vegetation trimming, herbicide application). From the parked vehicles, the workers would walk to the work area. Vehicles would not travel off the established roads in the mowed areas during operation once tortoises are allowed to reoccupy the site unless provisions of the Biological Opinion are implemented. Substantial soil compaction in the mowed areas of the solar array where desert tortoise could reoccupy would not occur during operations and maintenance activities.
C24-52	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	The decommissioning plan is not yet available for public review and comment. However, the draft EIS’ assumption that tortoises will be reintroduced to the project site means that the EIS should be revised to establish expectations and evaluate the likelihood of take of desert tortoises during decommissioning. Given that we do not know what the status of the desert tortoise or its remaining habitat will be at the end of the applicant’s ROW, the revised analysis may have to take into account that tortoises will be subjected to significant additional hardship, such as long-distance translocation.	Decommissioning in 30 years would result in similar impacts as the construction impacts for the All Mowing and Hybrid Alternatives. Edits have been made to the Final RMPA/EIS to clarify that the direct and indirect impacts of temporarily moving tortoises out of the site during decommissioning would be similar to those stated for construction of the Project. The Decommissioning and Site Reclamation Plan is available with the Final RMPA/EIS but would be reviewed again at least 5 years prior to planned permanent closure, and a Final Closure Plan would be prepared.

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						During this phase a determination would be made regarding what to do with the tortoises assuming they reoccupy the site. A Translocation Plan would be prepared for decommissioning, similar to construction. This has been clarified in the Final RMPA/EIS.
C24-53	8/31/2019	Gonzales, Shaun	--	Vegetation and Jurisdictional Waters	A supplemental draft EIS should be issued to evaluate the extent to which the cumulative use of herbicides on the project site and anticipated erosion over the duration of the right-of-way could impact nearby special status plant populations. Two special status plant species would be particularly impacted by the Gemini Solar project, with the most significant impacts impacting the threecorner milkvetch. According to the Draft RMPA/EIS, the implementation of the Gemini Solar project could result in the listing of the species as endangered by the Fish and Wildlife Service:	Refer to Master Response 2: Mojave Desert Tortoise (under Herbicides and Dust Palliatives) for a detailed description of herbicides and how the use of herbicides was addressed throughout the Draft RMPA/EIS. The impacts of herbicide use on special status plants were addressed throughout the Draft RMPA/EIS (e.g. page 3-48, page 3-49, page 3-50, page 3-55). The potential for changes to aeolian processes that create ideal habitat for threecorner milkvetch was analyzed on page 3-55 of the Draft RMPA/EIS. The cumulative analysis for threecorner milkvetch considers the impacts of all cumulative projects and other development within ROW corridors on the modeled habitat of this species (refer to Section 3.6: Vegetation and Jurisdictional Waters). The Draft RMPA/EIS acknowledges that the Proposed Action could result in the listing of threecorner milkvetch. As stated on page 3-49, "It is possible, given the magnitude of the impact of the Proposed Action on undisturbed habitat (from direct and indirect impacts), that USFWS may determine that a listing decision is warranted as a result of Project implementation." The mowing alternatives reduce the direct, indirect, and cumulative impacts on threecorner milkvetch. Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provides additional information on threecorner milkvetch including herbicide use.
C24-54	8/31/2019	Gonzales, Shaun	--	Vegetation and Jurisdictional Waters	The BLM should issue a supplemental draft EIS that further examines the potential for construction, operations and maintenance activities on the threecorner milkvetch and Nye milkvetch populations. Specifically, the potential long-term impacts on threecorner and Nye milkvetch of herbicide runoff from the project site into adjacent lands. The Draft RMPA/EIS acknowledges the potential for significant erosion to occur in parts of development area B (page 3-22). The draft EIS further states that “[i]ncreased erosion on the Project site from stormwater overland flows could result in increased deposition of fine-grained sediments into the surrounding washes, which would likely flow downstream and off site before settling out of the washes.”	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat, including herbicide use. The Draft RMPA/EIS acknowledges that adverse effects on threecorner milkvetch and Nye milkvetch habitat and individuals would occur during construction of the Proposed Action and action alternatives (refer to Section 3.6: Vegetation and Jurisdictional Waters). Impacts addressed notably include those identified by the commenter (e.g. herbicide drift, changes in stormwater flows affecting aeolian processes).
C24-55	8/31/2019	Gonzales, Shaun	--	Vegetation and Jurisdictional Waters	Application of herbicides at least twice a year to significant swaths of the project site over 25 years could result in the deposition of herbicides over a significantly larger area than just the project site. Various studies indicate the glyphosate may persist in soils long after application. At least one study found that glyphosate affected plant growth in sandy soils 120 days after application. xvi	Refer to Master Response 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a detailed description of herbicides and how the use of herbicides was addressed throughout the Draft RMPA/EIS (e.g., page 3-48, page 3-49, page 3-50, page 3-55, page 3-84).
C24-56	8/31/2019	Gonzales, Shaun	--	Wildlife, Migratory Birds, and Special Status Species	The BLM should issue a supplemental draft EIS that takes a hard look at whether or not the project could foreclose future opportunities to restore connectivity for bighorn sheep across Interstate-15. The Las Vegas RMP of 1998 requires that the BLM “[e]valuate discretionary activities proposed in bighorn sheep habitat and on a case-by-case basis.” (FW-1-b). The Draft RMPA/EIS does not fully evaluate the potential that the Gemini Solar project and other reasonably foreseeable developments may impede upon desert bighorn sheep movement corridors, thereby undermining the long-term sustainability and health of bighorn sheep herds. The Draft RMPA/EIS states that impacts on “the movements of large game species (e.g., bighorn sheep) would be minimal since these species rarely use the Project area.” However, this ignores the fact that movement between ranges and dispersal is a naturally rare occurrence. If it is impeded, the consequences can be significant over time. A peer-reviewed study by Clinton Epps found that “a rapid reduction in genetic diversity (up to 15%) to	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and this species does not regularly use the site.

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					<p>as few as 40 years of anthropogenic isolation. Interstate highways, canals and developed areas, where present, have apparently eliminated gene flow. These results suggest that anthropogenic barriers constitute a severe threat to the persistence of naturally fragmented populations.”</p> <p>Similarly, a report titled Bighorn Sheep: Conservation Challenges and Management Strategies for the 21st Century, authored by the Western Association of Fish and Wildlife Agencies:[i] “Bighorn sheep generally exist as metapopulations, where the total population of a geographic area consists of smaller subpopulations occupying naturally fragmented patches of suitable habitat that are interconnected genetically and demographically by periodic movements of individuals among those subpopulations. Consequently, the viability of the greater metapopulation depends upon the persistence of the subpopulations of which it is comprised.”</p> <p>According to the Nevada Division of Wildlife’s (NDOW) Bighorn Sheep Management Plan: “Bighorn sheep movement can be categorized into two general types. The first is daily movement where bighorns move between watering areas, foraging areas and resting areas. These movements normally do not exceed more than a few miles in a day. The second is seasonal movements where bighorn move to other parts of a range or to other mountain ranges in response to changes in vegetation quality, water availability or weather. These movements can include several thousand feet in elevation and a 20- or 30-mile movement to another range. The impediment of either of these movements can be devastating to a bighorn sheep population.”</p> <p>It should be noted in the EIS that the Muddy Mountains and Arrow Canyon Range are 15 miles apart – less than the 30-mile movement distance of bighorn sheep – and that the Gemini Solar project site would obstruct such a path between the two mountain ranges.</p> <p>Brown shaded areas represent desert bighorn sheep habitat based on Nevada Division of Wildlife Data, and the solid red footprint is that of the proposed Gemini Solar project site. Red outlines represent existing developments. Note the potential obstructions to movement at the intersection of Interstate 15 and Highway 93 with significant anthropogenic disturbance and development. To the north of the Gemini site is the Moapa Solar project. Not depicted are the Dry Lake Solar Energy Zone and other future projects. Potential pathways from the Muddy Mountains to the Arrow Canyon Range via the Dry Lake Range (west of the Gemini Solar project) likely contain more obstacles due to energy and transportation development. A 2010 assessment by NDOW identified lands immediately to the west and east of the proposed Gemini Solar project as bighorn sheep movement corridors. The movement corridor to the west of the Gemini Solar project has largely been developed, to include multiple solar projects, a surface mining operation, Interstates 15 and 93, and a travel stop.</p> <p>A supplemental EIS should evaluate the extent to which the Gemini Solar project and other reasonably foreseeable developments will become an impediment to dispersal of bighorn sheep between the Muddy Mountains, Dry Lake Range, and the Arrow Canyon Range. Because the Gemini Solar project’s current layout could act as a substantial barrier between the Muddy</p>	
C24-57	8/31/2019	Gonzales, Shaun	--	Old Spanish National Historic Trail	<p>The BLM should issue a supplemental Draft RMPA/EIS that corrects its analysis of the projects impacts on the natural setting along the Congressionally-designated Old Spanish National Historic Trail (OSNHT). The Draft RMPA/EIS states that “[t]he Hybrid Alternative would have reduced impacts to natural resources compared with the Proposed Action. Vegetation, soils, and wildlife would be maintained on site over 65 percent of the Project area, including desert tortoise.”</p>	<p>Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation. The OSNHT in the Project area is considered a corridor that appears to span most of the valley in which the solar facility is located. The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. The Hybrid Alternative would involve maintenance of vegetation across much of the Project site within this corridor. Following decommissioning and reclamation, the Hybrid Alternative would have less of an adverse effect than the Proposed Action on the OSNHT.</p>
C24-58	8/31/2019	Gonzales, Shaun	--	Threatened, Endangered, and Candidate Species	<p>As explained above in this letter, construction, operations and maintenance activities on the project site will likely substantially alter the vegetation cover, soils, and presence of wildlife. And although the Draft RMPA/EIS optimistically concludes that the success of reintroducing tortoises to the project site is “unknown,” studies on desert tortoise habitat requirements indicate quite clearly that lands subjected to</p>	<p>Refer to Response to Comment C24-28 for a discussion of how each of the issues identified (mechanical disturbance, erosion, weeds, and herbicides) was addressed in the Draft RMPA/EIS and the mitigation in Appendix H that reduces effects. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed,</p>

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					extensive and ongoing mechanical disturbance, increased erosion, spread of noxious weeds, and repeated herbicide treatments almost certainly do not qualify as suitable tortoise habitat.	acknowledging it is a new method and adverse effects, and the long-term monitoring that will be employed. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise including any adaptive management to address if methodologies are unsuccessful, as USFWS deems appropriate.
C25-1	8/18/2019	Gordon, Leslie	--	Alternatives	There is simply no need to use pristine land for solar (or wind) projects other than short-sighted convenience. Cover every parking spot, use rooftops, dehraded or burned out properties, of which there are MANY in Nevada.	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative.
C25-2	8/18/2019	Gordon, Leslie	--	Threatened, Endangered, and Candidate Species	Begging you to not destroy tortoises in an attempt to save ourselves. We can both survive.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The action alternatives identified by the BLM for this Project would involve mowing the vegetation and allowing tortoise to reoccupy the Project site. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as “disk and roll” or “traditional development methods”). This would allow for a portion of the native vegetation to remain. When construction is complete, the security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas. While the habitat would be altered, the purpose of the alternative is to allow for tortoise reoccupation of the area.
C26-1	7/25/2019	Gregg, Kathy	--	Alternatives	Urge the BLM to select the "no action" alternative, which means the Gemini Solar project should not be built on desert wildlands.	The commenter's preference for the No Action Alternative is noted.
C26-2	7/25/2019	Gregg, Kathy	--	Alternatives	If this project must be built on public lands, then the BLM should consider moving the project to an existing solar energy zone or to already-disturbed lands identified by the EPA's RE-Powering America's Land initiative.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. Previously disturbed sites were considered and are not available at this scale. Master Response 1: Alternatives provides additional information on the alternatives’ evaluation process.
C26-3	7/25/2019	Gregg, Kathy	--	Vegetation and Jurisdictional Waters	The BLM should more fully study the potential impacts of the vegetation mowing process on desert soils and plants, to include the likelihood that such mowing will lead to more non-native species taking root.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on invasive weeds in mowed areas. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the proposed use of vegetation mowing and the understanding that it is a new method and a description of the monitoring and reporting under the Site Restoration Plan, available with the Final RMPA/EIS. These studies would be specific to vegetation growth and health, in addition to desert tortoise population health. The potential impacts from mowing on habitat, soils, and plants, and invasive species was addressed in the Draft RMPA/EIS.
C26-4	7/25/2019	Gregg, Kathy	--	Threatened, Endangered, and Candidate Species	The BLM should more carefully evaluate the claims that desert tortoises will be able to thrive on the site after vegetation is mowed, soils are compacted, non-native plants take root, and solar panels are installed. The BLM's environmental analysis currently ignores how these negative impacts are likely to make it impossible to reintroduce desert tortoises or other wildlife to the site.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. Tracked vehicles and mowers would not be used in the solar facility once tortoise reoccupy the site unless the provisions identified in the Biological Assessment (and Biological Opinion) to avoid impacts are met. Soils would not be

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						<p>compacted, and non-native plants would be treated through various measures described in MM VG-1 in Appendix H. These effects were addressed in the Draft RMPA/EIS on page 3-85 through 3-90 and elaborated on further in the Biological Assessment, included as an Appendix to the Final RMPA/EIS. The Draft RMPA/EIS also adequately disclosed on page 3-90 that "Desert tortoise habitat over the entire solar facility acreage of 7,062 (2,858 hectares) would be eliminated, but tortoises could reoccupy up to 65 percent of the site when vegetation returns. However, it is not known whether reoccupation would be successful."</p> <p>While the Draft RMPA/EIS acknowledged that the outcome of reoccupation is not known. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the reduced potential severity of impacts afforded by the mowing should tortoise successfully occupy the solar, where such potential for reoccupation is not possible under the Proposed Action. Refer to the analysis in Final RMPA/EIS, which has text edits clarifying the types of effects on desert tortoise, particularly related to mowing.</p>
C26-5	7/25/2019	Gregg, Kathy	--	Threatened, Endangered, and Candidate Species	The BLM's analysis should also more thoroughly evaluate how construction of the massive solar project could risk genetic linkages across the desert tortoise's range.	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) for information on desert tortoise connectivity. The Biological Assessment for the Project provides considerable supplemental information on desert tortoise habitat, connectivity, corridors, ACECs, CHUs, and linkages that expands on the information provided in the Draft RMPA/EIS.
C26-6	7/25/2019	Gregg, Kathy	--	Wildlife, Migratory Birds, and Special Status Species	The BLM's analysis should more thoroughly evaluate the potential impact of this project on golden eagle and desert bighorn sheep foraging habitat. Bighorn and golden eagles have been known to traverse these wildlands.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for information on impacts to golden eagle habitat. Construction and development of the solar facility and gen-tie lines would result in the loss of approximately 7,097 acres (2,872 hectares) of valley foraging habitat; the impact would be locally significant due to the size of the site but regionally minor. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project.
C26-7	7/25/2019	Gregg, Kathy	--	Vegetation and Jurisdictional Waters	No aspect of the project should be allowed to jeopardize habitat for the endangered threecorner milkvetch. The plant's range is limited, and it does not make sense to risk the survival of a species to install solar panels that can just as easily generate electricity on rooftops.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise. These impacts disclosed in the RMPA/EIS will be considered when the BLM makes the decision to approve or deny the ROW application. Refer to Master Response 1: Alternatives regarding rooftop solar and why it is not considered a viable NEPA alternative.
C26-8	7/25/2019	Gregg, Kathy	--	Alternatives	There are many better places to install solar panels. Nevada has plenty of untapped rooftops, parking lots, and already-disturbed lands where we can generate clean energy without sacrificing wildlands. The Gemini Solar project will line the pockets of utility company investors and the project developer, but ignore opportunities for average citizens to cut down their own utility bills through net-metering.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process. The profits of the developers and utility providers is outside of the scope of NEPA analysis.
C26-9	7/25/2019	Gregg, Kathy	--	Alternatives	This company should not be given a free pass. The developer wants to build the Gemini Solar project on public lands outside of designated solar energy zones. The BLM previously established areas deemed fit for utility-scale solar energy where there would supposedly be fewer impacts on wildlife and recreation opportunities. The Gemini Solar project will not be built in one of those designated solar zones	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. No other solar energy zones are located in Clark County. Master Response 1:

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						<p>Alternatives provides additional information on the alternatives' evaluation process.</p> <p>Master Response 1: Alternatives (under the Off-Site Alternatives) describes this Solar PEIS's relevancy to the Project.</p>
C26-10	7/25/2019	Gregg, Kathy	--	Wildlife, Migratory Birds, and Special Status Species	The 11 square mile project will be built on wildlands that host an incredible diversity of desert plants and animals. In addition to desert tortoises, there are burrowing owls, kit fox, badgers, loggerhead shrike, LeConte's thrasher, cactus wren, phainopepla, and lesser nighthawks. Bighorn sheep are known to pass through and forage on the wildlands, and a significant portion of the rare threecorner milkvetch plant's known habitat would be lost or imperiled. The BLM's own environmental analysis has determined that this project will have significant impacts on wildlife.	The adverse effects on the resources identified by the commenter are all acknowledged in the Draft RMPA/EIS. The mowing alternatives reduce impacts and Appendix H includes numerous mitigation measures to reduce impacts. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise, bighorn sheep and migratory birds, and threecorner milkvetch, respectively.
C26-11	7/25/2019	Gregg, Kathy	--	Threatened, Endangered, and Candidate Species	The company misleadingly promises to relocate tortoises back to the project site after construction. Arevia Power suggests that vegetation mowed down to accommodate construction will re-grow underneath the solar panels and allow for tortoises to co-habitat on the industrial-scale project site. See below for why this is misleading and will put wildlife at increased risk.	Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities . The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS.
C26-12	7/25/2019	Gregg, Kathy	--	Vegetation and Jurisdictional Waters	Perhaps the most absurd aspect of the Gemini Solar project proposal is that the company promises to reduce impacts on wildlife by mowing vegetation on part of the site. This proposal is a public relations stunt, not a scientifically sound method to preserve habitat. Of the 11 square miles that Arevia Power plans to use for the Gemini Solar project, 7 square miles will be mowed and the remaining 4 square miles will be bulldozed. Plants could be mowed down to 18 or 24 inches, according to the BLM's environmental analysis, and that would require tractors driving across much of the site. This means that not only will plants be cut down or crushed by the vehicles, the soils will be compacted.	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized.</p> <p>Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities. The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS. Use of these methodologies are the best development method options to allow multiple uses of public lands without permanently damaging soil seed banks, perennial vegetation, or exacerbating weeds.</p> <p>As stated in the Draft RMPA/EIS on page 3-54, "[w]here vegetation is crushed, root balls would be left in place, tracked vehicles would distribute weight and minimize soil disturbance, and turns would be wide to also minimize soil disturbance. Native vegetation is expected to rebound and</p>

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						regrow after construction is complete." The crushed vegetation in the mowed areas is expected to recover over a number of years, based on evidence from other Mojave Desert solar facilities where vegetation was crushed and allowed to regrow (page 3-73 of the Draft RMPA/EIS). Impacts on vegetation within the mowed areas from crushing and soil disturbance are acknowledged in the Draft RMPA/EIS, although the effects would be considerably less than those in the traditional development areas.
C26-13	7/25/2019	Gregg, Kathy	--	Threatened, Endangered, and Candidate Species	The developer wishfully promises that desert tortoises can again use the area where vegetation was mowed, but ignores the fact that after driving vehicles back-and-forth across 7 square miles of fragile desert habitat, cutting and crushing plants, tortoises will be left with a severely degraded landscape. Soil compaction will make it difficult for desert plants to grow back, depriving tortoises of a food source. All of this disturbance by vehicles will also increase the likelihood that non-native weeds take root. Non-native plants -such as red brome and Sahara mustard - not only lack nutrients that tortoises need to survive, they also pose a fire hazard.	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized.</p> <p>Vegetation would be mowed to a height of trimmed to 24 inches (61 centimeters) (noting that most vegetation is already under 24 inches [61 centimeters] in this area, refer to Master Response 2: Mojave Desert Tortoise [under Alteration of Creosote and Desert Tortoise Habitat]). Mowing or trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. Mowed vegetation does not need to grow back since the vegetation has been maintained. Mowing and initial construction of the solar arrays would result in some crushing of vegetation, as described in Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities. The estimated amount of crushed vegetation is 25 percent, as identified in the Biological Assessment, included as an attachment to the Final RMPA/EIS.</p> <p>A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion, as described under Master Response 2: Mojave Desert Tortoise (under Scientific Study). A summary of effects from spread of non-native plants on desert tortoise is also included in Master Response 2: Mojave Desert Tortoise (under Weeds).</p>
C27-1	7/14/2019	Grund, Paul	--	Project Description	The proposed solar power facility will provide plenty of power during the daytime, but zero power at night. The battery backup is insufficient, so the utility will need to import fossil fuel based power from the grid at night. Reliance on fossil fuels will accelerate the dreaded global heating.	A battery energy storage system would be located within the Project site and would be used during periods of excess generation to store power until the customer or the system determines release of the power to be more valuable. The size of the battery storage system would be designed for the size of the Project. Based on preliminary engineering, approximately 425 5-MWh 4-hour battery systems, comprised of a total of approximately 53,550 individual batteries (126 batteries per system), would be installed on the Project site. The energy generated by the Project would offset energy generated by non-renewable, fossil fuels throughout operation. The Project would not require use or importation of fossil fuels and operation of the Project would not result in the power grid relying more heavily on fossil fuels.
C27-2	7/14/2019	Grund, Paul	--	Alternatives	A clean, safe, small, fourth generation nuclear power plant, such as those designed by Nuscale and Holtec could deliver steady power24/7, and should be built instead of or in addition to the solar facility.	Other types of renewable energy projects, including wind, geothermal, and other solar technologies, were rejected through the alternatives screening process from detailed consideration because they would not meet BLM's purpose and need to respond to the Applicant's application under Title V of the FLPMA for a ROW grant to construct, operate, maintain, and decommission a solar PV facility on public lands. Refer to the Alternatives Report, provided with the Draft RMPA/EIS, for additional discussions as to why other technologies were rejected. Nuclear would be rejected for similar

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						reasons. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.
C28-1	8/27/2019	Harold, Erin	--	Alternatives	Please select a No Action Alternative for the Gemini Solar Project and designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.	The commenter's preference for the No Action Alternative is acknowledged.
C28-2	8/27/2019	Harold, Erin	--	Threatened, Endangered, and Candidate Species	Approval of the project would result in the removal of over 7,100 acres or 11 square miles of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its range. It may need to be up-listed to Endangered status with the cumulative developments happening on its habitat.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for an explanation of how the Draft RMPA/EIS addressed the loss of habitat and impacts to desert tortoise. The desert tortoise is identified as a federally threatened species, as indicated on page 3-80 of the Draft RMPA/EIS, which states, "The only federally threatened, endangered, or candidate species known or with potential to occur in the Project area is the Mojave Desert tortoise." The Biological Assessment, provided as an appendix to the Final RMPA/EIS, provides supplemental information on the species and its impacts, building off of the summary provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) regarding consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action.
C28-3	8/27/2019	Harold, Erin	--	Threatened, Endangered, and Candidate Species	There are no peer reviewed studies that show that vegetation mowing and allowing desert tortoises to reenter a site with solar panels has long-term success. There has never been a vegetation mowing project that is this large.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C28-4	8/27/2019	Harold, Erin	--	Threatened, Endangered, and Candidate Species	Vegetation mowing will have very big impacts. All vegetation will be cut. Burrowing animals would be killed and deafened. Many of the estimated 900 juvenile desert tortoises would be missed and killed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C28-5	8/27/2019	Harold, Erin	--	Vegetation and Jurisdictional Waters	Biological soil crusts would be destroyed.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C28-6	8/27/2019	Harold, Erin	--	Vegetation and Jurisdictional Waters	Invasive annual weeds would move in on the mowed site.	The impacts of the spread and proliferation of invasive weeds associated with the Project is analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species.

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C28-7	8/27/2019	Harold, Erin	--	Threatened, Endangered, and Candidate Species	Tortoises would be allowed to re-enter the site. Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. The Biological Opinion will include desert tortoise protection measures to minimize take.
C28-8	8/27/2019	Harold, Erin	--	Threatened, Endangered, and Candidate Species	Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and innate conditions, as opposed to external factors (Nussear, Esque, et al. 2007), such as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known.
C28-9	8/27/2019	Harold, Erin	--	Vegetation and Jurisdictional Waters	The project would remove 700 acres or one quarter of the habitat for Threecorner milkvetch, one of Nevada's rarest plants.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
C28-10	8/27/2019	Harold, Erin	--	Alternatives	A supplemental EIS is needed because the BLM has not fully reviewed the full range of alternatives. The BLM should review off-site alternatives.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA during the alternative screening process as detailed in the Alternatives Report, including off-site alternatives that were considered and dismissed. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA.
C28-11	8/27/2019	Harold, Erin	--	Alternatives	The BLM should review a reduced footprint alternative which minimizes the impacts to the desert tortoise. This is one of the rarest plants in Nevada.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why reduced footprint alternative was not carried forward for analysis. The alternatives and the alternatives development process were compliant with NEPA. While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
C28-12	8/27/2019	Harold, Erin	--	Alternatives	The BLM should review an alternative that cuts out the 700 acres of Threecorner milkvetch habitat.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA. To determine which alternatives are reasonable and subject to inclusion in the

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						RMPA/EIS, an alternative screening was conducted as provided in the Alternatives Report. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. The alternatives were developed to reduce impacts to sensitive resources, including threecorner milkvetch.
C28-13	8/27/2019	Harold, Erin	--	Alternatives	The BLM should review a distributed generation alternative.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C28-14	8/27/2019	Harold, Erin	--	Vegetation and Jurisdictional Waters	The project site lies on one of the most undisturbed habitats in the Mojave Desert. It contains biological soil crusts and a large list of native Mojave Desert species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch, and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBCS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.
C28-15	8/27/2019	Harold, Erin	--	Vegetation and Jurisdictional Waters	Rare microphyll woodland with catclaw acacia and desert willow will be destroyed. These groves of deep-rooted desert trees harbor numerous bird species, and should be conserved, not shredded.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catclaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in 3.7: Wildlife, Migratory Birds, and Special Status Species.
C28-16	8/27/2019	Harold, Erin	--	Old Spanish National Historic Trail	The project would be built on part of the historic Old Spanish Trail. The massive build-out of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C28-17	8/27/2019	Harold, Erin	--	Visual Resources	The BLM should not downgrade the region's Visual Class to VRM Class IV. The project would destroy the view and experience from several popular locations including the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.	The commenter's preference is acknowledged. The change in VRM Class in the Project area from a Class III to a Class IV is proposed to be compatible with the solar development and particularly the visibility of the proposed transmission structure. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for additional explanation of how the Draft RMPA/EIS addressed the change to VRM class and visual impacts.

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						<p>Refer to Master Response 7: Impacts to Recreation for information on the Valley of Fire State Park and why the Project would not have impacts on the park. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. The Project would not affect the scenic quality of Valley of Fire State Park.</p> <p>As discussed in Table 3.10-1 of the Draft RMPA/EIS, the degree of visual contrast created by the Project as viewed from KOP 19 Colorock Quarry Road (at the border of the Muddy Mountains Wilderness Area) would be weak. No adverse effects on Wilderness Areas would occur. The degree of visual contrast created by the Project as viewed from KOP 15 BSBCB, would be moderate prior to mitigation and weak to moderate with mitigation. Visitor's experiences when traveling on BSBCB would be disrupted by the view of the Project only when in close proximity to the Project (within 0.5-mile).</p>
C28-18	8/27/2019	Harold, Erin	--	Socioeconomics and Environmental Justice	The project would be on a popular scenic route that tourists take to the Valley of Fire State Park and Muddy Mountains Wilderness Area. Compromising the visual resources of the region has the potential to impact tourism in Nevada. A largescale solar project of this size only creates about 15-20 full time jobs.	Refer to Master Response 7: Recreation regarding impacts to recreational access to recreational facilities in the region. Since impacts to recreation are not expected to be substantial, the associated economic benefits of recreation also are not expected to be adversely affected.
C28-19	8/27/2019	Harold, Erin	--	Alternatives	Several thousand acres of land are being developed in the Las Vegas Valley for new housing.	Refer to Master Response 1: Alternatives for information on why rooftop/distributed generation, including installation on new housing developments, was not considered as an alternative (see the responses to the related comments, below).
C28-20	8/27/2019	Harold, Erin	--	Alternatives	The amount of space located on the rooftops and over parking lots provides a more efficient alternative for solar panels, and eliminates the need for costly transmission lines.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length.
C29-1	6/25/2019	Jill, Vincent	--	Alternatives	Home solar projects are more efficient and cost effective. Home solar projects are reducing the need for huge generatory stations. As home solar generation increases it will make the big generation plants harder to recoup their cost.	Home solar is a type of distributed generation. Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. The cost of the power generated is outside the scope of the NEPA analysis.
C29-2	6/25/2019	Jill, Vincent	--	BLM Management	We keep losing desert public land to corporations.	In accordance with FLPMA, public lands are to be managed for multiple uses in a manner that accounts for a combination of balanced and diverse resources uses that consider the long-term needs of future generations for renewable and non-renewable resources (as was stated in the Final RMPA/EIS). Any future proposal, particularly on BLM-managed lands, will need to undergo its own NEPA process and assess cumulative impacts.
C30-1	9/4/2019	Kingma, Kevin	--	Alternatives	The choice of siting for the Gemini should have raised red flags for the BLM. The site is not within an existing solar energy zone or already-disturbed lands identified by the EPA's RE-Powering America's Land initiative. Solar energy zones were carefully identified for clear environmental reasons and therefor the Gemini site should be reviewed with prejudice and require full mitigation of all adverse impacts.	<p>Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. Previously disturbed sites were considered and are not available at this scale. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.</p> <p>The purpose of NEPA is to ensure informed and transparent environmental decision-making. NEPA does not create a general substantive duty on</p>

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						Federal agencies to mitigate or eliminate adverse environmental effects. The EIS process ensures that agencies will take a "hard look" at environmental consequences and by guaranteeing broad public dissemination of relevant information. NEPA itself does not impose substantive duties mandating particular results, but simply prescribes the necessary process for preventing uninformed agency action (<i>Robertson v. Methow Valley Citizens Council</i> . 490 U.S. 332, 352 (1989)). Several adverse effects remain after implementation of mitigation or plans, not just to the OSNHT, as analyzed in the RMPA/EIS. The finding of these adverse effects during the NEPA process does not necessarily preclude implementation of a project.
C30-2	9/4/2019	Kingma, Kevin	--	Mitigation and Design Measures	Mitigation should be required that makes the adverse impacts equal to or less than what would occur if a project is sited in a preferred solar energy zone. The DEIS does not attempt to do this.	<p>Master Response 1: Alternatives (under the Off-Site Alternatives) describes this Solar PEIS's relevancy to the Project. The variance process from the Solar PEIS does not apply to this Project.</p> <p>The Draft RMPA/EIS analyzed impacts associated with the Project and identified appropriate mitigation to avoid, minimize, rectify, reduce, or compensate for adverse effects (40 CFR § 1508.20). The purpose of NEPA is to ensure informed and transparent environmental decision-making. NEPA does not create a general substantive duty on Federal agencies to mitigate or eliminate adverse environmental effects. The EIS process ensures that agencies will take a "hard look" at environmental consequences and by guaranteeing broad public dissemination of relevant information. NEPA itself does not impose substantive duties mandating particular results, but simply prescribes the necessary process for preventing uninformed agency action (<i>Robertson v. Methow Valley Citizens Council</i>. 490 U.S. 332, 352 (1989)). Several adverse effects remain after implementation of mitigation or plans as analyzed in the RMPA/EIS. The finding of these adverse effects during the NEPA process does not necessarily preclude implementation of a project.</p>
C30-3	9/4/2019	Kingma, Kevin	--	Alternatives	The BLM needs to open both eyes and consider alternative no impact siting for this project. The same amount of solar energy could be generated from solar panels installed and covering large retail and business parking lots in the Las Vegas area or in a project sited in an approved solar energy zone.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including distributed generation and in SEZs. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.
C30-4	9/4/2019	Kingma, Kevin	--	Visual Resources	Your BLM photos of visual impacts are of poor quality, resolution and lighting so that visual impacts are significantly underestimated.	The method of conducting the photographs was in accordance with industry-standard techniques. The photos taken during the photographic survey used for the KOPs are intended to be representative of what an observer would see if standing at the same location. The methodology used to conduct photographs for the analysis and for the visual contrast rating is detailed in the Visual Resources Technical Report and followed BLM standards and protocols. The resolution of the PDFs in the Appendices to the Draft RMPA/EIS may have been reduced to reduce the file size. Refer to the simulations in the Visual Resources Technical Report, available with and incorporated by reference into the Draft RMPA/EIS.
C30-5	9/4/2019	Kingma, Kevin	--	Visual Resources	There are no views of the visual disturbance from the Muddy Mountains looking north and westward toward the project. Visual disturbance would affect everyone who visits the Valley of Fire State Park and the Muddy Mountains and there is no possible mitigation of it.	Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for additional explanation of how the Draft RMPA/EIS addressed the change to VRM class and visual impacts. As stated on page 3-11 of the Visual Resources Technical Report, "[v]iews from the Muddy Mountains Wilderness Area and Muddy Peak were initially considered as KOPs but were ultimately not included. The

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						Panorama Environmental, Inc. team visited potential cKOPs in the Muddy Mountains Wilderness Area and determined that the Project site would not be visible from those locations. The team was unable to access Muddy Peak, due to the extreme difficulty of the terrain and the lack of access. Although the Project site would be visible from Muddy Peak, the number of potential viewers is estimated to be extremely low due to difficulty of access."
C30-6	9/4/2019	Kingma, Kevin	--	Threatened, Endangered, and Candidate Species	Threatened species such as the Desert Tortoise and Milk Vetch would be harmed by the Gemini project. the proposed mitigations of partial mowing, transplanting are unproven, more likely than not to fail, and are therefor not reasonable attempts at mitigating harm to threatened species.	<p>Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. Impacts to modeled habitat in development areas D and E would still occur. Mowing and drive and crush methods reduce effects by maintaining the soils and potentially the seed bank.</p> <p>Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation.</p>
C31-1	3/3/2019	Kreile, Alex	--	Socioeconomics and Environmental Justice	The Gemini Solar project is not worth the impact it will have on desert wildlife and the landscape. The jobs it will create are temporary and will do little to help the long term stablity of our economy.	The Project is subject to a NEPA process to identify and disclose impacts to inform the decision whether or not to grant this ROW. The BLM will decide to approve or deny the application based on the NEPA analysis and other considerations. Section 3.15: Socioeconomics and Environmental Justice of the Draft RMPA/EIS provides information on the benefits to employment and the economy resulting from the Project.
C31-2	3/3/2019	Kreile, Alex	--	Air Quality and Climate Change	Solar PV modules do not create a significant reduction in carbon emissions compared to the steady baseline generation of nuclear - simply look at the National Renewable Energy Laboratory LCA data. Not to mention the issue of energy demand at different times of the day.	<p>Refer to the Responses to Comment B6-1 and B6-5 for a discussion of the carbon off-sets of the Project. Refer to Section 3.9: Air Quality and Climate Change for a discussion of the carbon emissions from the Project. The analysis quantifies the GHG emissions during construction and operation but presents the offsets of the renewable energy generated. Refer to Table 3.9-4 on page 3-98 of the Draft RMPA/EIS that demonstrated the Project could offset over 19 million metric tons CO2e over the Project's lifespan. This amount is equivalent to the offset of emissions from over 130,000 passenger vehicles per year, which is a substantial benefit and important means for combating climate change. This Project includes battery storage to allow for providing energy when it is needed at different times of day.</p> <p>NREL LCA reports that solar and nuclear significantly reduce carbon emissions compared to non-renewable energy generation. The Life Cycle GHG Emissions from Electricity Generation (Fact Sheet) (NREL, 2018) it concludes that, "Total life cycle GHG emissions from renewables and nuclear energy are much lower and generally less variable than those from fossil fuels. For example, from cradle to grave, coal-fired electricity releases about 20 times more GHGs per kilowatt-hour than solar, wind, and nuclear electricity (based on median estimates for each technology)."</p>
C32-1	8/22/2019	LaChance, Denise	--	Threatened, Endangered, and Candidate Species	Why would you allow devastation of habitat for endangered tortoises? Humans can find alternative places for solar farms. These tortoises cannot move to another home.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The action alternatives identified by the BLM for this Project would involve mowing the vegetation and allowing tortoise

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						to reoccupy the Project site. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as “disk and roll” or “traditional development methods”). This would allow for a portion of the native vegetation to remain. When construction is complete, the security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas. While the habitat would be altered, the purpose of the alternative is to allow for tortoise reoccupation of the area.
C33-1	8/1/2019	Lahav, Denise	--	Vegetation and Jurisdictional Waters	Please halt the Gemini Solar project due to it’s impending damage to threatened plant and animal species and the damage it will cause to the land.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch, vegetation communities, and measures to reduce impacts. Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise. These impacts disclosed in the RMPA/EIS will be considered when the BLM makes the decision to approve or deny the ROW application.
C33-2	8/1/2019	Lahav, Denise	--	Alternatives	There are so many other ways to do solar projects such as using rooftops. Please explore and create alternative ways to build this type of energy that do not create so much environmental damage.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including distributed generation and in SEZs. Master Response 1: Alternatives provides additional information on the alternatives’ evaluation process. The alternatives were developed to reduce impacts to sensitive resources.
C34-1	6/13/2019	Lucas, Delphine	--	Visual Resources	As a Californian, we have seen how solar projects have compromised some of our most beautiful and environmentally sensitive areas. I would really be sad to see Valley of Fire ruined with one of these projects.	Section 3.10: Visual Resources of the Draft RMPA/EIS analyzes the impact of the Project on views in the Project area. Adverse effects on scenic quality and viewers due to development of the Project would occur. Refer to Master Response 7: Impacts to Recreation for information on the Valley of Fire State Park. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. The Project would not affect the scenic quality of Valley of Fire State Park.
C34-2	6/13/2019	Lucas, Delphine	--	Alternatives	There are better alternatives for location of this project.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process detailed in the Alternatives Report.
C35-1	9/3/2019	Lyman, Shari	--	Threatened, Endangered, and Candidate Species	The study seemed to focus solely on the desert tortoise, but this part of the study did not consider the hazard to the tortoise with the removal and then the potential re-introduction of the tortoise in an environment covered with solar panels.	Refer to Master Response 2: Mojave Desert Tortoise for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. The translocations of tortoise for construction and reintroduction after construction were described on page 3-86 of the Draft RMPA/EIS and the impacts assessed also on page 3-86 for the All Mowing Alternative and 3-88 for the Hybrid Alternative and explained further in Master Response 2: Mojave Desert Tortoise (under Tortoise Translocation).
C35-2	9/3/2019	Lyman, Shari	--	Threatened, Endangered, and Candidate Species	The no on of using solar panels for shade is questionable and should be studied for the danger and hazardous conditions it creates. What is the guarantee that the “shade” created by the solar panels will be safe for the desert tortoise?	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and innate conditions, as opposed to external factors (Nussear, Esque, et al. 2007), such as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known. A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise including any

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						adaptive management to address if methodologies are unsuccessful, as USFWS deems appropriate. Master Response 2: Mojave Desert Tortoise provides additional information on effects of shade from solar panels on desert tortoise.
C35-3	9/3/2019	Lyman, Shari	--	Wildlife, Migratory Birds, and Special Status Species	The study failed to include many other species that will be negatively affected. The project places barriers along the migratory route of the Big Horn Sheep impeding their ability to seasonally migrate as they historically have done. What is the remediation of the Big Horn Sheep migration route?	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. As described on page 3-135 of the Draft RMPA/EIS, a well-established herd of bighorn sheep is present in the Muddy Mountains and Valley of Fire region; however, the bighorn sheep do not regularly use the Project site, and adverse effects on their migration patterns are not expected.
C35-4	9/3/2019	Lyman, Shari	--	Vegetation and Jurisdictional Waters	The study failed to include many plant species that will be destroyed and not replaced until the project concludes, if then. The reclamation of the environment at the end of the project is questionable since the plan is vague on how the land, plants, and animals will be reclaimed once the solar project ends. There is no mention of what happens when the solar panels meet their life expectancy or a new, more cost-effective, and more efficient technology enters the energy market. What is the reclamation plan for the environment when the solar panels fail, expire, or become obsolete?	Section 3.6: Vegetation and Jurisdictional Waters of the Draft RMPA/EIS details the direct and permanent impacts to vegetation for the Proposed Action and both alternatives, including many plant species. Construction of the Proposed Action would cause the direct and permanent loss of 7,097 acres (2,872 hectares) of vegetation and the habitat it provides. The Decommissioning and Site Reclamation Plan are available with the Final RMPA/EIS. The Decommissioning and Site Reclamation Plan details the decommissioning, reclamation, and revegetation methods that would be implemented once the life of the approximately 30-year Project comes to an end. The Plan includes the monitoring and standards that must be met. The degree of reclamation needed is greatly reduced through the mowing alternative as compared with the Proposed Action, since vegetation is maintained on site for the life of the facility. As described on page 3-169 of the Draft RMPA/EIS, operation and maintenance and decommissioning would require disposal of damaged and/or spent solar panels. All handling and processing of construction debris, including solar panels, would be in accordance with applicable regulatory requirements as described in the POD
C35-5	9/3/2019	Lyman, Shari	--	Transportation	The study failed to include the traffic disruption along I-15 for the construction and maintenance of the solar project. I-15 is a main corridor for traffic between California, Nevada, Utah, and the US-Canadian border. The main concern is the travel for residents of Moapa Valley getting to work, school, medical facilities, shopping, and other in Las Vegas. When floods have destroyed I-15 and impeded traffic, Moapa Valley has been isolated from basic services and needs accessed from Las Vegas. What is the remediation of the traffic disruption?	Section 3.16: Transportation of the Draft RMPA/EIS analyzes impacts to roadway operations from Project construction and operation. As discussed on page 3-162 of the Draft RMPA/EIS, during the peak construction period, the analysis area roadways and highways (including I-15) would continue to operate acceptably, with a volume lower than the LOS C capacity. Effects on roadway operations would not be adverse. Operation of the Project would generate substantially fewer trips than construction and effects on traffic operations would be even less than during construction. The Project would not have an adverse effect on the operation of I-15 during Project construction or operation.
C36-1	8/20/2019	Lyons, David H.	--	Threatened, Endangered, and Candidate Species	The already impacted desert regions of the southwest provide critical habitat for many species. This project would add much more of this impact.	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) for more information on critical habitat and connectivity. There is no designated Critical Habitat, as defined by the ESA, within the Project site boundaries. The nearest designated Critical Habitat for desert tortoise is within the Mormon Mesa CHU, which overlaps with the Coyote Springs ACEC to the northwest of the Project area, far outside of the area of direct effects. The Project would not result in direct effects on Critical Habitat for desert tortoise or any primary constituent elements.

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C36-2	8/20/2019	Lyons, David H.	--	Alternatives	If solar must be implemented, I suggest panels and infrastructure that makes use of existing buildings and structures.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C37-1	8/29/2019	MacRae, Marsden	--	Alternatives	Please do NOT approve Project Gemini, which will DESTROY the surface of the desert. There are many, many other options for placement of solar panels, including on existing structures in the Las Vegas Valley.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Adequate space to accommodate the Project was not available in the Dry Lake SEZ, or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises and threecorner milkvetch individuals.
C37-2	8/29/2019	MacRae, Marsden	--	Vegetation and Jurisdictional Waters	Considerations such as the number of jobs the project will impact are completely immaterial to the destruction of the very land the BLM is tasked to preserve.	The Project is subject to a NEPA process to identify and disclose impacts to inform the decision whether or not to grant this ROW. The BLM will decide to approve or deny the application based on the NEPA analysis and other considerations.
C38-1	8/20/2019	Mauthe, Nancy	--	Threatened, Endangered, and Candidate Species	What impact and what plans do you or all going to do if this project goes through for the endangered animals living there? Especially the Desert Tortoise.	The desert tortoise is currently listed as Threatened under the federal ESA. It is the only federally listed species known to occur on the Project site. It receives similar treatment as a species listed as "Endangered" in terms of the process undertaken under NEPA and the ESA for addressing impacts to this species. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) for information on the consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan for the Project will include numerous research and monitoring objectives for the desert tortoise and native vegetation, as summarized in Master Response 2: Mojave Desert Tortoise (under Scientific Study).
C38-2	8/21/2019	Mauthe, Nancy	--	Vegetation and Jurisdictional Waters	This project will destroy habitat of which has already been identified by Fish and Wildlife has endangered. Plants etc.	The Project site is not located within any USFWS-designated critical habitat. Three taxa of special status plants, threecorner milkvetch, Nye milkvetch, and rosy two-tone beardtongue, were positively identified within the study area during the Spring 2018 special status plant inventory. These species are not listed threatened or endangered species under the ESA. Threecorner milkvetch is a state endangered species, which would require a permit for take of any individuals through the Nevada Division of Forestry. Impacts to these sensitive species are analyzed in Section 3.6: Vegetation and Jurisdictional Waters of the Draft RMPA/EIS.
C38-3	8/22/2019	Mauthe, Nancy	--	Vegetation and Jurisdictional Waters	25 percent of habitat of endangered plants will be destroyed. Mostly what these animals eat.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat, including the quantification of habitat impacts. MM VG-2 would be

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						implemented, which requires the use of drive and crush instead of disk and roll to reduce impacts to the threecorner milkvetch.
C38-4	8/23/2019	Mauthe, Nancy	--	Threatened, Endangered, and Candidate Species	Suggesting putting a fence around is a joke, these animals love to dig and burrow and they hibernate in the fall digging down into the soil.	Under the mowing alternatives, fencing would be lifted to 8 inches (20 centimeters) above ground to allow tortoise to reoccupy the mowed areas of the facility once operational. Other animals that can fit or burrow under the 8-inch (20-centimeter) opening are presumed to be able to re-enter the Project site as well.
C39-1	6/14/2019	Mortensen, Wendell	--	Alternatives	With tortoises, historic trails and camps in the area I can't believe this area is even being considered.	The Draft RMPA/EIS addresses each of these issues. The Project is subject to a NEPA process to identify and disclose impacts to inform the decision whether or not to grant this ROW. The BLM will decide to approve or deny the application based on the NEPA analysis and other considerations. Master Response 2: Mojave Desert Tortoise and Master Response 5: Old Spanish National Historic Trail provide additional information on desert tortoise and OSNHT, respectively.
C40-1	8/19/2019	Mudge, Steve	--	Alternatives	Please, enough with the giant solar farms. While originally well intentioned we now know the ecological damage they do on a large scale.	The Draft RMPA/EIS addresses various resources issues. The Project is subject to a NEPA process to identify and disclose impacts to inform the decision whether or not to grant this ROW. The BLM will decide to approve or deny the application based on the NEPA analysis and other considerations.
C40-2	8/19/2019	Mudge, Steve	--	Alternatives	I would rather the money be invested in rooftop solar-- closer to the needs of the population and land already spoken for.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C41-1	8/18/2019	Myers, Lisa	--	Wildlife, Migratory Birds, and Special Status Species	You are putting animals at risk by putting this project where you plan to put it.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals and to reduce some of the impacts or severity of impacts on desert tortoises. The Draft RMPA/EIS identified mitigation measures to reduce or minimize impacts to desert habitat. Master Response 2: Mojave Desert Tortoise and Master Response 3: Bighorn Sheep and Migratory Birds provide additional information on desert tortoise and bighorn sheep and migratory and special status birds, respectively.
C41-2	8/18/2019	Myers, Lisa	--	Alternatives	We do need solar energy but it would be better to put this and other similar projects on already degraded land.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why off-site alternatives were dismissed during the alternative screening process. Adequate space to accommodate the Project was not available in the Dry Lake SEZ, or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action.
C41-3	8/18/2019	Myers, Lisa	--	Alternatives	Solar panels belong on buildings and maybe on parking garages but not on pristine land that animals and plants depend on to survive.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C42-1	8/21/2019	Nguyen, Thanh Phong	--	Alternatives	As we all know, energy is a big part of the Nevada economy and the life-blood for all citizens, but the Gemini Solar project cannot only be proponents of the health welfare of the people and not consider the	The comment is noted. The Project is subject to a NEPA process to identify and disclose impacts to inform the decision whether or not to grant this

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					effect that may cause on the natural beauty and sustainability of the plant and wildlife it may come to destroy. "We often think that these projects are for the welfare of the people, creating jobs, and beneficial to the economy, but it is destructive in nature."	ROW. The BLM will decide to approve or deny the application based on the NEPA analysis and other considerations.
C43-1	8/30/2019	Nolan, Ruth	--	BLM Management	Please select a No Action Alternative for the Gemini Solar Project and designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.	The commenter's preference for the No Action Alternative is acknowledged.
C43-2	8/30/2019	Nolan, Ruth	--	Threatened, Endangered, and Candidate Species	Approval of the project would result in the removal of over 7,100 acres or 11 square miles of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its range. It may need to be up-listed to Endangered status with the cumulative developments happening on its habitat.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for an explanation of how the Draft RMPA/EIS addressed the loss of habitat and impacts to desert tortoise. The desert tortoise is identified as a federally threatened species, as indicated on page 3-80 of the Draft RMPA/EIS, which states, "The only federally threatened, endangered, or candidate species known or with potential to occur in the Project area is the Mojave Desert tortoise." The Biological Assessment, provided as an appendix to the Final RMPA/EIS, provides supplemental information on the species and its impacts, building off of the summary provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) regarding consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action.
C43-3	8/30/2019	Nolan, Ruth	--	Threatened, Endangered, and Candidate Species	There are no peer reviewed studies that show that vegetation mowing and allowing desert tortoises to re-enter a site with solar panels has long-term success. There has never been a vegetation mowing project that is this large.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C43-4	8/30/2019	Nolan, Ruth	--	Threatened, Endangered, and Candidate Species	Vegetation mowing will have very big impacts. All vegetation will be cut. Burrowing animals would be killed and deafened. Many of the estimated 900 juvenile desert tortoises would be missed and killed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C43-5	8/30/2019	Nolan, Ruth	--	Vegetation and Jurisdictional Waters	Biological soil crusts would be destroyed.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C43-6	8/30/2019	Nolan, Ruth	--	Vegetation and Jurisdictional Waters	Invasive annual weeds would move in on the mowed site.	The impacts of the spread and proliferation of invasive weeds associated with the Project is analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native

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						species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species.
C43-7	8/30/2019	Nolan, Ruth	--	Threatened, Endangered, and Candidate Species	Tortoises would be allowed to re-enter the site. Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for a discussion of operations and maintenance activities that would occur, the intensity and frequency, and the protections required to minimize effects on desert tortoise. The Biological Opinion will also outline measures to reduce the risk to tortoises on the Project site.
C43-8	8/30/2019	Nolan, Ruth	--	Threatened, Endangered, and Candidate Species	Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and innate conditions, as opposed to external factors (Nussear, Esque, et al. 2007), such as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known.
C43-9	8/30/2019	Nolan, Ruth	--	Vegetation and Jurisdictional Waters	The project would remove 700 acres of the habitat for Threecorner milkvetch, one of Nevada's rarest plants.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
C43-10	8/30/2019	Nolan, Ruth	--	Alternatives	The BLM should review off-site alternatives.	Refer to Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why off-site alternatives were dismissed during the alternative screening process. Adequate space to accommodate the Project was not available in the Dry Lake SEZ, or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action.
C43-11	8/30/2019	Nolan, Ruth	--	Alternatives	The BLM should review a reduced footprint alternative which minimizes the impacts to the desert tortoise.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why reduced footprint alternative was not carried forward for analysis. The alternatives and the alternatives development process were compliant with NEPA. While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.

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C43-12	8/30/2019	Nolan, Ruth	--	Alternatives	The BLM should review an alternative that cuts out the 700 acres of Threecorner milkvetch habitat.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA. To determine which alternatives are reasonable and subject to inclusion in the RMPA/EIS, an alternative screening was conducted as provided in the Alternatives Report. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. The details of the alternatives' evaluation process are in the Alternative Report, incorporated by reference into the Draft RMPA/EIS, and is available on the ePlanning website. The alternatives were developed to reduce impacts to sensitive resources, including threecorner milkvetch.
C43-13	8/30/2019	Nolan, Ruth	--	Alternatives	The BLM should review a distributed generation alternative.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C43-14	8/30/2019	Nolan, Ruth	--	Vegetation and Jurisdictional Waters	The project site lies on one of the most undisturbed habitats in the Mojave Desert. It contains biological soil crusts and a large list of native Mojave Desert species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBCS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.
C43-15	8/30/2019	Nolan, Ruth	--	Vegetation and Jurisdictional Waters	Rare microphyll woodland with catclaw acacia and desert willow will be destroyed. These groves of deep-rooted desert trees harbor numerous bird species, and should be conserved, not shredded.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catclaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in 3.7: Wildlife, Migratory Birds, and Special Status Species.
C43-16	8/30/2019	Nolan, Ruth	--	Old Spanish National Historic Trail	The project would be built on part of the historic Old Spanish Trail. The massive build-out of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.

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C43-17	8/30/2019	Nolan, Ruth	--	Visual Resources	The BLM should not downgrade the region's Visual Class to VRM Class IV. The project would destroy the view and experience from several popular locations including the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.	Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and how the Draft RMPA/EIS addressed effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.
C43-18	8/30/2019	Nolan, Ruth	--	Socioeconomics and Environmental Justice	The project would be on a popular scenic route that tourists take to the Valley of Fire State Park and Muddy Mountains Wilderness Area. Compromising the visual resources of the region has the potential to impact tourism in Nevada. A large-scale solar project of this size only creates about 15-20 full time jobs.	Refer to Master Response 7: Recreation for information on the effects on recreational users, including tourists, and why the Project would not impact recreational use of the Valley of Fire State Park and Muddy Mountains Wilderness Area. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. Socioeconomic impacts are addressed in Section 3.15: Socioeconomics and Environmental Justice and were not found to be adverse and beneficial in some cases due to the increase in employment during construction, operation and maintenance, and decommissioning.
C43-19	8/30/2019	Nolan, Ruth	--	Alternatives	Several thousand acres of land are being developed in the Las Vegas Valley for new housing.	Refer to Master Response 1: Alternatives for information on why rooftop/distributed generation, including installation on new housing developments, was not considered as an alternative (see the responses to the related comments, below).
C43-20	8/30/2019	Nolan, Ruth	--	Alternatives	The amount of space located on the rooftops and over parking lots provides a more efficient alternative for solar panels, and eliminates the need for costly transmission lines.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length.
C44-1	8/30/2019	Norris, Jeannine	--	BLM Management	Please select a No Action Alternative for the Gemini Solar Project and designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.	The commenter's preference for the No Action Alternative is acknowledged.
C44-2	8/30/2019	Norris, Jeannine	--	Threatened, Endangered, and Candidate Species	Approval of the project would result in the removal of over 7,100 acres or 11 square miles of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its range. It may need to be up-listed to Endangered status with the cumulative developments happening on its habitat.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for an explanation of how the Draft RMPA/EIS addressed the loss of habitat and impacts to desert tortoise. The desert tortoise is identified as a federally threatened species, as indicated on page 3-80 of the Draft RMPA/EIS, which states, "The only federally threatened, endangered, or candidate species known or with potential to occur in the Project area is the Mojave Desert tortoise." The Biological Assessment, provided as an appendix to the Final RMPA/EIS, provides supplemental information on the species and its impacts, building off of the summary provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) regarding consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action.
C44-3	8/30/2019	Norris, Jeannine	--	Threatened, Endangered, and Candidate Species	There are no peer reviewed studies that show that vegetation mowing and allowing desert tortoises to re-enter a site with solar panels has long-term success. There has never been a vegetation mowing project that is this large.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this

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						technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C44-4	8/30/2019	Norris, Jeannine	--	Threatened, Endangered, and Candidate Species	Vegetation mowing will have very big impacts. All vegetation will be cut. Burrowing animals would be killed and deafened. Many of the estimated 900 juvenile desert tortoises would be missed and killed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C44-5	8/30/2019	Norris, Jeannine	--	Vegetation and Jurisdictional Waters	Biological soil crusts would be destroyed.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C44-6	8/30/2019	Norris, Jeannine	--	Vegetation and Jurisdictional Waters	Invasive annual weeds would move in on the mowed site.	The impacts of the spread and proliferation of invasive weeds associated with the Project is analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species.
C44-7	8/30/2019	Norris, Jeannine	--	Threatened, Endangered, and Candidate Species	Tortoises would be allowed to re-enter the site. Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for a discussion of operations and maintenance activities that would occur, the intensity and frequency, and the protections required to minimize effects on desert tortoise. The Biological Opinion will also outline measures to reduce the risk to tortoises on the Project site.
C44-8	8/30/2019	Norris, Jeannine	--	Threatened, Endangered, and Candidate Species	Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and innate conditions, as opposed to external factors (Nussear, Esque, et al. 2007), such as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known.
C44-9	8/30/2019	Norris, Jeannine	--	Vegetation and Jurisdictional Waters	The project would remove 700 acres of the habitat for Threecorner milkvetch, one of Nevada's rarest plants.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada

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						Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
C44-10	8/30/2019	Norris, Jeannine	--	Alternatives	A supplemental EIS is needed because the BLM has not fully reviewed the full range of alternatives. The BLM should review off-site alternatives.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA during the alternative screening process as detailed in the Alternatives Report, including off-site alternatives that were considered and dismissed. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA.
C44-11	8/30/2019	Norris, Jeannine	--	Alternatives	The BLM should review a reduced footprint alternative which minimizes the impacts to the desert tortoise.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why reduced footprint alternative was not carried forward for analysis. The alternatives and the alternatives development process were compliant with NEPA. While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
C44-12	8/30/2019	Norris, Jeannine	--	Alternatives	The BLM should review an alternative that cuts out the 700 acres of Threecorner milkvetch habitat. This is one of the rarest plants in Nevada.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA. To determine which alternatives are reasonable and subject to inclusion in the RMPA/EIS, an alternative screening was conducted as provided in the Alternatives Report. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. The alternatives were developed to reduce impacts to sensitive resources, including threecorner milkvetch.
C44-13	8/30/2019	Norris, Jeannine	--	Alternatives	The BLM should review a distributed generation alternative.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C44-14	8/30/2019	Norris, Jeannine	--	Vegetation and Jurisdictional Waters	The project site lies on one of the most undisturbed habitats in the Mojave Desert. It contains biological soil crusts and a large list of native Mojave Desert species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch, and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a

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						BBCS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.
C44-15	8/30/2019	Norris, Jeannine	--	Vegetation and Jurisdictional Waters	Rare microphyll woodland with catclaw acacia and desert willow will be destroyed. These groves of deep-rooted desert trees harbor numerous bird species, and should be conserved, not shredded.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catclaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in 3.7: Wildlife, Migratory Birds, and Special Status Species.
C44-16	8/30/2019	Norris, Jeannine	--	Old Spanish National Historic Trail	The project would be built on part of the historic Old Spanish Trail. The massive buildout of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C44-17	8/30/2019	Norris, Jeannine	--	Visual Resources	The BLM should not downgrade the region's Visual Class to VRM Class IV. The project would destroy the view and experience from several popular locations including the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.	Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and how the Draft RMPA/EIS addressed effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.
C44-18	8/30/2019	Norris, Jeannine	--	Socioeconomics and Environmental Justice	The project would be on a popular scenic route that tourists take to the Valley of Fire State Park and Muddy Mountains Wilderness Area. Compromising the visual resources of the region has the potential to impact tourism in Nevada. A large-scale solar project of this size only creates about 15-20 full time jobs.	Refer to Master Response 7: Recreation for information on the effects on recreational users, including tourists, and why the Project would not impact recreational use of the Valley of Fire State Park and Muddy Mountains Wilderness Area. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. Socioeconomic impacts are addressed in Section 3.15: Socioeconomics and Environmental Justice and were not found to be adverse and beneficial in some cases due to the increase in employment during construction, operation and maintenance, and decommissioning.
C44-19	8/30/2019	Norris, Jeannine	--	Alternatives	Several thousand acres of land are being developed in the Las Vegas Valley for new housing.	Refer to Master Response 1: Alternatives for information on why rooftop/distributed generation, including installation on new housing developments, was not considered as an alternative (see the responses to the related comments, below).
C44-20	8/30/2019	Norris, Jeannine	--	Alternatives	The amount of space located on the rooftops and over parking lots provides a more efficient alternative for solar panels, and eliminates the need for costly transmission lines.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length.

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C45-1	8/18/2019	Oppen, Anne van	--	Alternatives	Please consider a less sensitive habit for this massive project. The desert tortoise does not have a choice in where they live. You do have a choice of where to place your project.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Adequate space to accommodate the Project was not available in the Dry Lake SEZ, or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises and threecorner milkvetch individuals.
C45-2	8/18/2019	Oppen, Anne van	--	Alternatives	Why can't this massive and great alternative energy source be spread out in the developed desert - on roof tops and above parking lots?	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C46-1	8/18/2019	Overlie, Janine	--	Alternatives	Please use building rooftops and parking lots to put your panels – leave the desert for the desert animals. Humans take to much of this planet as it is.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises.
C46-2	8/18/2019	Overlie, Janine	--	Alternatives	If you must use desert then only use desert that has already been destroyed by humans.	Refer to Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why off-site alternatives were dismissed during the alternative screening process. Adequate space to accommodate the Project was not available in the Dry Lake SEZ, or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action.
C47-1	8/18/2019	Papp, Meagan	--	Threatened, Endangered, and Candidate Species	The impacts to our precious and irreplaceable environmental resources is simply too great. Desert tortoises can not find new homes.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation.
C47-2	8/18/2019	Papp, Meagan	--	Cultural Resources	Cultural sites will never be the same.	Refer to Section 3.12: Cultural Resources of the Draft RMPA/EIS for the analysis of Project impacts on cultural resources and the mitigation measures identified. As analyzed, implementation of the Proposed Action and action alternatives would result in adverse effects on known and previously undiscovered cultural resources. Mitigation identified in Appendix H would reduce impacts to cultural resources.
C47-3	8/18/2019	Papp, Meagan	--	Alternatives	Solar energy can be generated anywhere in our sunshine soaked state. Rooftop and parking lot energy could power us --without damaging pristine environment.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises.

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C47-4	8/18/2019	Papp, Meagan	--	Alternatives	Is the industrial park nearby the proposed project site covered with solar panels ? Might that be a good place to start ?	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. An alternative to develop a solar facility at the industrial park would not meet the purpose and need of the Project. ROWs for solar have already been issued and solar has been developed in the Apex area.
C48-1	8/20/2019	Papp, Ashleigh	--	Threatened, Endangered, and Candidate Species	The impacts to our precious and irreplaceable environmental resources are simply too great. Desert tortoises can not find new homes.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The action alternatives identified by the BLM for this Project would involve mowing the vegetation and allowing tortoise to reoccupy the Project site. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as "disk and roll" or "traditional development methods"). This would allow for a portion of the native vegetation to remain. When construction is complete, the security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas. While the habitat would be altered, the purpose of the alternative is to allow for tortoise reoccupation of the area.
C48-2	8/20/2019	Papp, Ashleigh	--	Cultural Resources	Cultural sites will never be the same.	Refer to Section 3.12: Cultural Resources of the Draft RMPA/EIS for the analysis of Project impacts on cultural resources and the mitigation measures identified. As analyzed, implementation of the Proposed Action and action alternatives would result in adverse effects on known and previously undiscovered cultural resources. Mitigation identified in Appendix H would reduce impacts to cultural resources.
C48-3	8/20/2019	Papp, Ashleigh	--	Alternatives	Rooftop and parking lot energy could power us --without damaging the pristine environment.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises.
C48-4	8/20/2019	Papp, Ashleigh	--	Alternatives	Is the industrial park nearby the proposed project site covered with solar panels? Might that be a good place to start?	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. An alternative to develop a solar facility at the industrial park would not meet the purpose and need of the Project. ROWs for solar have already been issued and solar has been developed in the Apex area.
C49-1	8/29/2019	Parks, John C.	--	BLM Management	I strongly recommend the BLM select a No Action Alternative for the Gemini Solar Project and designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.	The commenter's preference for the No Action Alternative is acknowledged.
C49-2	8/29/2019	Parks, John C.	--	Threatened, Endangered, and Candidate Species	Approval of the project would result in the removal of over 7,100 acres or 11 square miles of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its range. It may need to be up-listed to Endangered status with the cumulative developments happening on its habitat.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for an explanation of how the Draft RMPA/EIS addressed the loss of habitat and impacts to desert tortoise. The desert tortoise is identified as a federally threatened species, as indicated on page 3-80 of the Draft RMPA/EIS, which states, "The only federally threatened, endangered, or candidate species known or with potential to occur in the Project area is the Mojave Desert tortoise." The Biological Assessment, provided as an

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						appendix to the Final RMPA/EIS, provides supplemental information on the species and its impacts, building off of the summary provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) regarding consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action.
C49-3	8/29/2019	Parks, John C.	--	Threatened, Endangered, and Candidate Species	There are no peer reviewed studies that show that vegetation mowing and allowing desert tortoises to re-enter a site with solar panels has long-term success. There has never been a vegetation mowing project that is this large.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C49-4	8/29/2019	Parks, John C.	--	Threatened, Endangered, and Candidate Species	Vegetation mowing will have very big impacts. All vegetation will be cut. Burrowing animals would be injured or killed. Many of the estimated 900 juvenile desert tortoises would also be killed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C49-5	8/29/2019	Parks, John C.	--	Vegetation and Jurisdictional Waters	Biological soil crusts would be destroyed.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C49-6	8/29/2019	Parks, John C.	--	Vegetation and Jurisdictional Waters	Invasive annual weeds would move in on the mowed site.	The impacts of the spread and proliferation of invasive weeds associated with the Project is analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species.
C49-7	8/29/2019	Parks, John C.	--	Threatened, Endangered, and Candidate Species	Tortoises would be allowed to re-enter the site. Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. The Biological Opinion will include desert tortoise protection measures to minimize take.
C49-8	8/29/2019	Parks, John C.	--	Threatened, Endangered, and Candidate Species	Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and innate conditions, as opposed to external factors (Nussear, Esque, et al. 2007), such as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known.

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C49-9	8/29/2019	Parks, John C.	--	Vegetation and Jurisdictional Waters	The project would remove 700 acres or one quarter of the habitat for Threecorner milkvetch, one of Nevada's rarest plants.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
C49-10	8/29/2019	Parks, John C.	--	Alternatives	A supplemental EIS is needed because the BLM has not fully reviewed the full range of alternatives. The BLM should review off-site alternatives.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA during the alternative screening process as detailed in the Alternatives Report, including off-site alternatives that were considered and dismissed. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA.
C49-11	8/29/2019	Parks, John C.	--	Alternatives	The BLM should review a reduced footprint alternative which minimizes the impacts to the desert tortoise.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why reduced footprint alternative was not carried forward for analysis. The alternatives and the alternatives development process were compliant with NEPA. While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
C49-12	8/29/2019	Parks, John C.	--	Alternatives	The BLM should review an alternative that cuts out the 700 acres of Threecorner milkvetch habitat. This is one of the rarest plants in Nevada.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA. To determine which alternatives are reasonable and subject to inclusion in the RMPA/EIS, an alternative screening was conducted as provided in the Alternatives Report. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. The alternatives were developed to reduce impacts to sensitive resources, including threecorner milkvetch.
C49-13	8/29/2019	Parks, John C.	--	Alternatives	The BLM should review a distributed generation alternative.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.

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C49-14	8/29/2019	Parks, John C.	--	Vegetation and Jurisdictional Waters	The project site lies on one of the most undisturbed habitats in the Mojave Desert. It contains biological soil crusts and a large list of native Mojave Desert species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBCS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.
C49-15	8/29/2019	Parks, John C.	--	Vegetation and Jurisdictional Waters	Rare microphyll woodland with catclaw acacia and desert willow will be destroyed. These groves of deep-rooted desert trees harbor numerous bird species, and should be conserved, not shredded.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catclaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in 3.7: Wildlife, Migratory Birds, and Special Status Species.
C49-16	8/29/2019	Parks, John C.	--	Old Spanish National Historic Trail	The project would be built on part of the historic Old Spanish Trail. The massive build-out of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C49-17	8/29/2019	Parks, John C.	--	Visual Resources	The BLM should not downgrade the region's Visual Class to VRM Class IV. The project would destroy the view and experience from several popular locations including the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.	Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and how the Draft RMPA/EIS addressed effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.
C49-18	8/29/2019	Parks, John C.	--	Socioeconomics and Environmental Justice	The project would be on a popular scenic route that tourists take to the Valley of Fire State Park and Muddy Mountains Wilderness Area. Compromising the visual resources of the region has the potential to impact tourism in Nevada. A large-scale solar project of this size only creates about 15-20 full time jobs.	Refer to Master Response 7: Recreation for information on the effects on recreational users, including tourists, and why the Project would not impact recreational use of the Valley of Fire State Park and Muddy Mountains Wilderness Area. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. Socioeconomic impacts are addressed in Section 3.15: Socioeconomics and Environmental Justice and were not found to be adverse and beneficial in some cases due to the increase in employment during construction, operation and maintenance, and decommissioning.

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C49-19	8/29/2019	Parks, John C.	--	Wildlife, Migratory Birds, and Special Status Species	Generation of electricity from wind and solar projects is appropriate in some areas but not at the expense of our remaining biologically diverse and rich natural areas.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals and to reduce some of the impacts or severity of impacts on desert tortoises. The Draft RMPA/EIS identified mitigation measures to reduce or minimize impacts to desert habitat. The Project is subject to a NEPA process to identify and disclose impacts to inform the decision whether or not to grant this ROW. The BLM will decide to approve or deny the application based on the NEPA analysis and other considerations.
C49-20	8/29/2019	Parks, John C.	--	Alternatives	The loss of high value resources (view shed, wildlife habitat, open spaces) is greater than any benefit to the public from this project. Sacrificing high value natural areas in the name of promoting renewable energy is counter intuitive and disingenuous.	The comment is noted. The Project is subject to a NEPA process to identify and disclose impacts to inform the decision whether or not to grant this ROW. The BLM will decide to approve or deny the application based on the NEPA analysis and other considerations.
C49-21	8/29/2019	Parks, John C.	--	Mitigation and Design Measures	Will the operator be required to mitigate these losses?	The Draft RMPA/EIS analyzed impacts associated with the Project and identified appropriate mitigation to avoid, minimize, rectify, reduce, or compensate for adverse effects (40 CFR § 1508.20). The purpose of NEPA is to ensure informed and transparent environmental decision-making. NEPA does not create a general substantive duty on Federal agencies to mitigate or eliminate adverse environmental effects. The EIS process ensures that agencies will take a "hard look" at environmental consequences and by guaranteeing broad public dissemination of relevant information. NEPA itself does not impose substantive duties mandating particular results, but simply prescribes the necessary process for preventing uninformed agency action (<i>Robertson v. Methow Valley Citizens Council</i> . 490 U.S. 332, 352 (1989)). Several adverse effects remain after implementation of mitigation or plans as analyzed in the RMPA/EIS. The finding of these adverse effects during the NEPA process does not necessarily preclude implementation of a project.
C49-22	8/29/2019	Parks, John C.	--	Alternatives	Development may be acceptable in areas that have previously been disturbed, but should not be acceptable in undisturbed areas as these impacts will permanently alter to landscape and biota. The amount of space located on the abandoned mines, rooftops and over parking lots provides a more efficient alternative for solar panels, and eliminates the need for costly transmission lines.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length. The Project is subject to a NEPA process to identify and disclose impacts to inform the decision whether or not to grant this ROW. The BLM will decide to approve or deny the application based on the NEPA analysis and other considerations.
C50-1	7/25/2019	Peppard, Todd	--	Alternatives	I am against moving forward with the Gemini Solar Project. I feel that there are plenty of opportunities with existing and future structures; buildings, parking structures, homes, etc. that we do not need to expand to BLM land to enjoy the great benefits of solar energy.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C51-1	8/25/2019	Peterson, Darlene	--	BLM Management	Please select a No Action Alternative for the Gemini Solar Project and designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.	The commenter's preference for the No Action Alternative is acknowledged.
C51-2	8/25/2019	Peterson, Darlene	--	Threatened, Endangered, and Candidate Species	Approval of the project would result in the removal of over 7,100 acres or 11 square miles of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for an explanation of how the Draft RMPA/EIS addressed the loss of habitat and impacts to desert tortoise. The desert tortoise is identified as

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					range. It may need to be up-listed to Endangered status with the cumulative developments happening on its habitat.	a federally threatened species, as indicated on page 3-80 of the Draft RMPA/EIS, which states, "The only federally threatened, endangered, or candidate species known or with potential to occur in the Project area is the Mojave Desert tortoise." The Biological Assessment, provided as an appendix to the Final RMPA/EIS, provides supplemental information on the species and its impacts, building off of the summary provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) regarding consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action.
C51-3	8/25/2019	Peterson, Darlene	--	Threatened, Endangered, and Candidate Species	There are no peer reviewed studies that show that vegetation mowing and allowing desert tortoises to re-enter a site with solar panels has long-term success. There has never been a vegetation mowing project that is this large.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C51-4	8/25/2019	Peterson, Darlene	--	Threatened, Endangered, and Candidate Species	Vegetation mowing will have very big impacts. All vegetation will be cut. Burrowing animals would be killed and deafened. Many of the es mated 900 juvenile desert tortoises would be missed and killed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C51-5	8/25/2019	Peterson, Darlene	--	Vegetation and Jurisdictional Waters	Biological soil crusts would be destroyed.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C51-6	8/25/2019	Peterson, Darlene	--	Vegetation and Jurisdictional Waters	Invasive annual weeds would move in on the mowed site.	The impacts of the spread and proliferation of invasive weeds associated with the Project is analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species.
C51-7	8/25/2019	Peterson, Darlene	--	Threatened, Endangered, and Candidate Species	Tortoises would be allowed to re-enter the site. Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. The Biological Opinion will include desert tortoise protection measures to minimize take.
C51-8	8/25/2019	Peterson, Darlene	--	Threatened, Endangered,	Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and

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				and Candidate Species		innate conditions, as opposed to external factors (Nussear, Esque, et al. 2007), such as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known.
C51-9	8/25/2019	Peterson, Darlene	--	Vegetation and Jurisdictional Waters	The project would remove 700 acres or one quarter of the habitat for Threecorner milkvetch, one of Nevada's rarest plants.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
C51-10	8/25/2019	Peterson, Darlene	--	Alternatives	A supplemental EIS is needed because the BLM has not fully reviewed the full range of alternatives. The BLM should review off-site alternatives	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA during the alternative screening process as detailed in the Alternatives Report, including off-site alternatives that were considered and dismissed. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA.
C51-11	8/25/2019	Peterson, Darlene	--	Alternatives	The BLM should review a reduced footprint alternative which minimizes the impacts to the desert tortoise.	<p>Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why reduced footprint alternative was not carried forward for analysis. The alternatives and the alternatives development process were compliant with NEPA.</p> <p>While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.</p>
C51-12	8/25/2019	Peterson, Darlene	--	Alternatives	The BLM should review an alternative that cuts out the 700 acres of Threecorner milkvetch habitat. This is one of the rarest plants in Nevada	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA. To determine which alternatives are reasonable and subject to inclusion in the RMPA/EIS, an alternative screening was conducted as provided in the Alternatives Report. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. The details of the alternatives' evaluation process are in the Alternative Report, incorporated by reference into the Draft RMPA/EIS, and is available on the ePlanning website. The alternatives were developed to reduce impacts to sensitive resources, including threecorner milkvetch.

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C51-13	8/25/2019	Peterson, Darlene	--	Alternatives	The BLM should review a distributed generation alternative.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C51-14	8/25/2019	Peterson, Darlene	--	Vegetation and Jurisdictional Waters	The project site lies on one of the most undisturbed habitats in the Mojave Desert. It contains biological soil crusts and a large list of native Mojave Desert species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch, and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBCS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.
C51-15	8/25/2019	Peterson, Darlene	--	Vegetation and Jurisdictional Waters	Rare microphyll woodland with catclaw acacia and desert willow will be destroyed. These groves of deep-rooted desert trees harbor numerous bird species, and should be conserved, not shredded.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catclaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in 3.7: Wildlife, Migratory Birds, and Special Status Species.
C51-16	8/25/2019	Peterson, Darlene	--	Old Spanish National Historic Trail	The project would be built on part of the historic Old Spanish Trail. The massive build-out of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C51-17	8/25/2019	Peterson, Darlene	--	Visual Resources	The BLM should not downgrade the region's Visual Class to VRM Class IV. The project would destroy the view and experience from several popular loca ons including the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bi er Springs Backcountry Byway.	Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and how the Draft RMPA/EIS addressed effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.
C51-18	8/25/2019	Peterson, Darlene	--	Socioeconomics and Environmental Justice	The project would be on a popular scenic route that tourists take to the Valley of Fire State Park and Muddy Mountains Wilderness Area. Compromising the visual resources of the region has the potential to impact tourism in Nevada. A large-scale solar project of this size only creates about 15-20 full me jobs.	Refer to Master Response 7: Recreation for information on the effects on recreational users, including tourists, and why the Project would not impact recreational use of the Valley of Fire State Park and Muddy Mountains Wilderness Area. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park.

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						Socioeconomic impacts are addressed in Section 3.15: Socioeconomics and Environmental Justice and were not found to be adverse and beneficial in some cases due to the increase in employment during construction, operation and maintenance, and decommissioning.
C51-19	8/25/2019	Peterson, Darlene	--	Alternatives	Several thousand acres of land are being developed in the Las Vegas Valley for new housing.	Refer to Master Response 1: Alternatives for information on why rooftop/distributed generation, including installation on new housing developments, was not considered as an alternative (see the responses to the related comments, below).
C51-20	8/25/2019	Peterson, Darlene	--	Alternatives	The amount of space located on the rooftops and over parking lots provides a more efficient alternative for solar panels, and eliminates the need for costly transmission lines.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length.
C52-1	6/8/2019	Public, Jean	--	Alternatives	solar can be put on top of hotels, commercial buildings, tops of cars, tops of residences, ther is no way you need to take virgin land and desttroy all nature to put this crap down.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C52-2	6/8/2019	Public, Jean	--	Alternatives	you put solar on contaminated polluted land, not on virgin land.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why off-site alternatives were dismissed during the alternative screening process. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection.
C53-1	9/5/2019	Quantz, Michael	--	Alternatives	We have thousands of roofs in the Las Vegas area where solar panels could be placed on otherwise wasted space, would have no effect on the natural areas of desert and would satisfy the desire for more renewable sources.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why rooftop/distributed generation was not considered as an alternative.
C54-1	8/21/2019	Reich, Lisa	--	Alternatives	I am writing you to beg you to please use other locations for your Gemini solar project. Please do this for the tortoises that would be affected.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Adequate space to accommodate the Project was not available in the Dry Lake SEZ, or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises.
C55-1	9/1/2019	Rutherford, Lisa	--	Alternatives	It seems clear that real alternatives to this project have not been fairly considered. Alternatives for the Gemini solar energy project should include already-degraded BLM lands (rather than mowing native vegetation in a desert tortoise habitat area) and consideration of BLM lands where no tortoise exist or the habitat is lower quality.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Adequate space to accommodate the Project was not available in the Dry Lake SEZ, or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and

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						transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises.
C55-2	9/1/2019	Rutherford, Lisa	--	Threatened, Endangered, and Candidate Species	BLM seems to be putting solar development and tortoise conservation at odds with each other, which is not what we need. Americans who own and love these public lands and the T&E species they project should not be forced to choose between solar and protection. Both are achievable if BLM takes a broader approach to achieving that.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation.
C55-3	9/1/2019	Rutherford, Lisa	--	Threatened, Endangered, and Candidate Species	In spite of the current status and increase in tortoises in the Northeast Recovery Unit (NRU) since 2004, one must consider declines in other areas generally. The “Status of Desert Tortoise” report (SDT) shows that from 2004 to 2014 there was an overall decline of 40,660 animals in spite of the NRU’s increase of 13,300. Since the NRU has fared better than other areas it seems even more imperative that the BLM work to protect areas in the NRU where tortoises and good tortoise habitat exist. The SDT report states, “...in the Northeastern Mojave Recovery Unit, the number of juveniles is increasing, but not as rapidly as are adult numbers in that recovery unit.” Juveniles are critical to the successful growth of these communities; protecting areas where they need support is essential.	The decline and vulnerability of overall desert tortoise populations is acknowledged in the Draft RMPA/EIS and Biological Assessment. Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The action alternatives identified by the BLM for this Project would involve mowing the vegetation and allowing tortoise to reoccupy the Project site. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as “disk and roll” or “traditional development methods”). This would allow for a portion of the native vegetation to remain. When construction is complete, the security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas. While the habitat would be altered, the purpose of the alternative is to allow for tortoise reoccupation of the area. The Biological Assessment for the Project provides considerable supplemental information on desert tortoise habitat, connectivity, corridors, ACECs, CHUs, and linkages that expands on the information provided in the Draft RMPA/EIS.
C55-4	9/1/2019	Rutherford, Lisa	--	Threatened, Endangered, and Candidate Species	Even to a casual observer such as myself, it seems a no brainer that mowing an area of existing vegetation and then reintroducing tortoises is not a recipe for success in the area.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized.
C55-5	9/1/2019	Rutherford, Lisa	--	Threatened, Endangered, and Candidate Species	The SDT pointed out that invasive plants are increasing in the Mojave Desert and pose a substantial threat to tortoises particularly in areas of disturbance.	The Draft RMPA/EIS analyzed the indirect effect on invasive plant species on desert tortoise habitat and foraging (refer to Section 3.8: Threatened, Endangered, and Candidate Species). Extensive measures are included in MM VG-1 to remove and treat Sahara mustard and other invasive weeds on the Project site, that will be incorporated into the Integrated Weed Management Plan and implemented. The mowing alternatives also reduces these impacts as native vegetation would be maintained on-site. Refer to Master Response 2: Mojave Desert Tortoise (under Weeds and Herbicides and Dust Palliatives) and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for additional information on the spread of invasive plants/weeds, impacts on desert tortoise, and the required mitigation measures.

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C55-6	9/1/2019	Rutherford, Lisa	--	Vegetation and Jurisdictional Waters	In addition to the invasive plants, increased human activity causes additional dust which accumulates on vegetation leaves reducing photosynthesis and decreasing water-use efficiency, making some vegetation that would otherwise be good for tortoise consumption unfit.	Refer to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust for information on dust generation and measures to reduce impacts. The impact was addressed on page 3-48 of the Draft RMPA/EIS, "Indirect impacts could also include additional fugitive dust, which can impede photosynthesis and other metabolic processes of native plants or increased or changed sedimentation from Project activities...MM Air Quality (AQ)-1 requires soil stabilization measures to minimize air quality impacts from windblown dust."
C55-7	9/1/2019	Rutherford, Lisa	--	Vegetation and Jurisdictional Waters	During the mowing activities biological soil crusts would be destroyed, making the area even more vulnerable to invasive species and erosion.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan and invasive plants. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C55-8	9/1/2019	Rutherford, Lisa	--	Threatened, Endangered, and Candidate Species	Mowing activities might very likely also destroy tortoise burrows.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-going Operations and Maintenance) for information on how construction would occur in the mowed areas. Neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Burrows would be flagged and avoided, as much as possible.
C55-9	9/1/2019	Rutherford, Lisa	--	Threatened, Endangered, and Candidate Species	The stress on the tortoises from being removed from their homeland and then returned after the mowing and solar facility establishment is unknown and risky. What if the tortoises do not react well? What then is the plan? The damage will already have been done.	Refer to Master Response 2: Mojave Desert Tortoise for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. The translocations of tortoise for construction and reintroduction after construction were described on page 3-86 of the Draft RMPA/EIS and the impacts assessed also on page 3-86 for the All Mowing Alternative and 3-88 for the Hybrid Alternative and explained further in Master Response 2: Mojave Desert Tortoise (under Tortoise Translocation).
C55-10	9/1/2019	Rutherford, Lisa	--	Threatened, Endangered, and Candidate Species	The SDT also notes that “Since 1994, urban development around Las Vegas has likely been the largest contributor to habitat loss throughout the range” and “The development of large solar facilities has also reduced the amount of habitat available to desert tortoises.” In spite of this they conclude that the species’ distribution has not changed substantially in terms of the overall extent of its range. But that provides little comfort as we move forward with a new period of extreme growth in these areas where the recovery units exist and look forward to the expected growth in these areas. In fact the SDT went on to add, “The critical habitat units in aggregate are intended to protect the variability that occurs across the large range of the desert tortoise; the loss of any specific unit would compromise the ability of critical habitat as a whole to serve its intended function and conservation role.” Death by a thousand cuts as BLM approves solar projects on land important to the desert tortoise community will not help. In spite of the challenges that the recovery units face due to growth activities, the SDT’s publication reports these activities have not created a significant problem, and “...habitat units continue to support sufficient space to support viable populations within each of the six recovery units.” But will this continue to be the case, is the question. Since the SDT was released much activity has occurred and much will occur in the future. Those of us who cherish our public lands and want them protected count on the BLM to make reasonable decisions regarding their use.	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) for more information on critical habitat. There is no designated Critical Habitat, as defined by the ESA, within the Project site boundaries. The nearest designated Critical Habitat for desert tortoise is within the Mormon Mesa CHU, which overlaps with the Coyote Springs ACEC to the northwest of the Project area, far outside of the area of direct effects. The Project would not result in direct effects on Critical Habitat for desert tortoise or any primary constituent elements. Cumulative impacts to desert tortoise were addressed in the Draft RMPA/EIS on page 3-85 for the Proposed Action, page 3-88 for the All Mowing Alternative, and page 3-90 for the Hybrid Alternative, and a new project was incorporated into the cumulative analysis in the Final RMPA/EIS. Impacts from known proposed solar developments were quantified.
C55-11	9/1/2019	Rutherford, Lisa	--	Threatened, Endangered, and Candidate Species	The SDT report acknowledges that the BLM and USFWS have a big job managing the recovery areas and protecting the T&E species particularly the threatened desert tortoise from harm. Roads, off road vehicles, and common ravens prove particularly challenging. With this in mind, then, it seems particularly	Recovery of the desert tortoise is understandably a difficult undertaking given the threats, including those identified by the commenter. The action alternatives included the incorporation of many measures to reduce effects to tortoise and to potentially reduce the impacts traditional solar

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					important that the BLM pay special attention to project requests such as this. That seems an easier way of effectively managing harm in habitat areas.	development has had on desert tortoise. Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation.
C55-12	9/1/2019	Rutherford, Lisa	--	Alternatives	It's my understanding that 18 Solar Energy Zones have been analyzed under NEPA for such installations. For the BLM to then ignore these zones and instead accept energy proposals outside the designated zones not only does not make sense but shows BLM's unwillingness to be held to its own plans.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. No other solar energy zones are located in Clark County. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process. Master Response 1: Alternatives (under the Off-Site Alternatives) describes this Solar PEIS's relevancy to the Project.
C55-13	9/1/2019	Rutherford, Lisa	--	BLM Management	Additionally, it's very troubling that BLM would consider permitting the project with a land use plan amendment to a class IV Vision Resource Management class when the area is currently class III due to its proximity to the Old Spanish National Historic Trail, Muddy Mountain Wilderness Area and other areas of visual importance. Making a change to class IV which would, according to your own information, "provide for management activities that require major modifications of the existing character of the landscape" adds insult to the injury of allowing this project outside of the proposed Solar Energy Zones already established.	Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for more information on the visual impacts to OSNHT, Muddy Mountains Wilderness, and other areas and the change in VRM class. Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process including in SEZs. Master Response 1: Alternatives also describes this Project's relationship to the Solar PEIS.
C56-1	8/20/2019	Sailor, Cheryl	--	Alternatives	Please move this project to a space so that critically endangered tortoises and plants will not be so adversely affected.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises.
C57-1	8/25/2019	Sampson, Sondra	--	Alternatives	We cannot afford to lose ANY wilderness for solar. There are plenty of rooftops across Nevada and the USA.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why rooftop/distributed generation was not considered as an alternative.
C57-2	8/25/2019	Sampson, Sondra	--	BLM Management	Please select a No Action Alternative for the Gemini Solar Project and designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan	The commenter's preference for the No Action Alternative is acknowledged.
C57-3	8/25/2019	Sampson, Sondra	--	Threatened, Endangered, and Candidate Species	Approval of the project would result in the removal of over 7,100 acres or 11 square miles of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its range. It may need to be up-listed to Endangered status with the cumulative developments happening on its habitat.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for an explanation of how the Draft RMPA/EIS addressed the loss of habitat and impacts to desert tortoise. The desert tortoise is identified as a federally threatened species, as indicated on page 3-80 of the Draft RMPA/EIS, which states, "The only federally threatened, endangered, or candidate species known or with potential to occur in the Project area is the Mojave Desert tortoise." The Biological Assessment, provided as an appendix to the Final RMPA/EIS, provides supplemental information on the species and its impacts, building off of the summary provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) regarding consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action.
C57-4	8/25/2019	Sampson, Sondra	--	Threatened, Endangered, and Candidate Species	There are no peer reviewed studies that show that vegetation mowing and allowing desert tortoises to re-enter a site with solar panels has long-term success. There has never been a vegetation mowing project that is this large.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing

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						desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C57-5	8/25/2019	Sampson, Sondra	--	Threatened, Endangered, and Candidate Species	Vegetation mowing will have very big impacts. All vegetation will be cut. Burrowing animals would be killed and deafened. Many of the es mated 900 juvenile desert tortoises would be missed and killed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C57-6	8/25/2019	Sampson, Sondra	--	Vegetation and Jurisdictional Waters	Biological soil crusts would be destroyed.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C57-7	8/25/2019	Sampson, Sondra	--	Vegetation and Jurisdictional Waters	Invasive annual weeds would move in on the mowed site.	The impacts of the spread and proliferation of invasive weeds associated with the Project is analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species.
C57-8	8/25/2019	Sampson, Sondra	--	Threatened, Endangered, and Candidate Species	Tortoises would be allowed to re-enter the site. Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. The Biological Opinion will include desert tortoise protection measures to minimize take.
C57-9	8/25/2019	Sampson, Sondra	--	Threatened, Endangered, and Candidate Species	Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and innate conditions, as opposed to external factors (Nussear, Esque, et al. 2007), such as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known.
C57-10	8/25/2019	Sampson, Sondra	--	Vegetation and Jurisdictional Waters	The project would remove 700 acres or one quarter of the habitat for Threecorner milkvetch, one of Nevada's rarest plants.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as

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						Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
C57-11	8/25/2019	Sampson, Sondra	--	Alternatives	A supplemental EIS is needed because the BLM has not fully reviewed the full range of alternatives. The BLM should review off-site alternatives.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA during the alternative screening process as detailed in the Alternatives Report, including off-site alternatives that were considered and dismissed. The CEQ and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives nor do they require an off-site alternative. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA.
C57-12	8/25/2019	Sampson, Sondra	--	Alternatives	The BLM should review a reduced footprint alternative which minimizes the impacts to the desert tortoise.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why reduced footprint alternative was not carried forward for analysis. The alternatives and the alternatives development process were compliant with NEPA. While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
C57-13	8/25/2019	Sampson, Sondra	--	Alternatives	The BLM should review an alternative that cuts out the 700 acres of Threecorner milkvetch habitat. This is one of the rarest plants in Nevada.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA. To determine which alternatives are reasonable and subject to inclusion in the RMPA/EIS, an alternative screening was conducted as provided in the Alternatives Report. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. The details of the alternatives' evaluation process are in the Alternative Report, incorporated by reference into the Draft RMPA/EIS, and is available on the ePlanning website. The alternatives were developed to reduce impacts to sensitive resources, including threecorner milkvetch.
C57-14	8/25/2019	Sampson, Sondra	--	Alternatives	The BLM should review a distributed genera on alternative.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C57-15	8/25/2019	Sampson, Sondra	--	Vegetation and Jurisdictional Waters	The project site lies on one of the most undisturbed habitats in the Mojave Desert. It contains biological soil crusts and a large list of native Mojave Desert species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch, and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through

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						MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBBS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.
C57-16	8/25/2019	Sampson, Sondra	--	Vegetation and Jurisdictional Waters	Rare microphyll woodland with catclaw acacia and desert willow will be destroyed. These groves of deep-rooted desert trees harbor numerous bird species, and should be conserved, not shredded.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catclaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in 3.7: Wildlife, Migratory Birds, and Special Status Species.
C57-17	8/25/2019	Sampson, Sondra	--	Old Spanish National Historic Trail	The project would be built on part of the historic Old Spanish Trail. The massive build-out of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C57-18	8/25/2019	Sampson, Sondra	--	Visual Resources	The BLM should not downgrade the region's Visual Class to VRM Class IV. The project would destroy the view and experience from several popular locations including the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.	Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and how the Draft RMPA/EIS addressed effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.
C57-19	8/25/2019	Sampson, Sondra	--	Socioeconomics and Environmental Justice	The project would be on a popular scenic route that tourists take to the Valley of Fire State Park and Muddy Mountains Wilderness Area. Compromising the visual resources of the region has the potential to impact tourism in Nevada. A large-scale solar project of this size only creates about 15-20 full me jobs.	Refer to Master Response 7: Recreation for information on the effects on recreational users, including tourists, and why the Project would not impact recreational use of the Valley of Fire State Park and Muddy Mountains Wilderness Area. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. Socioeconomic impacts are addressed in Section 3.15: Socioeconomics and Environmental Justice and were not found to be adverse and beneficial in some cases due to the increase in employment during construction, operation and maintenance, and decommissioning.
C57-20	8/25/2019	Sampson, Sondra	--	Alternatives	Several thousand acres of land are being developed in the Las Vegas Valley for new housing.	Refer to Master Response 1: Alternatives for information on why rooftop/distributed generation, including installation on new housing developments, was not considered as an alternative (see the responses to the related comments, below).
C57-21	8/25/2019	Sampson, Sondra	--	Alternatives	The amount of space located on the rooftops and over parking lots provides a more efficient alternative for solar panels, and eliminates the need for costly transmission lines.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was

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						not considered as an alternative. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length.
C58-1	7/20/2019	Schank, Alice	--	Alternatives	I urge you to select the No Action alternative on the upcoming Gemini Solar use of desert wildlands. Please use existing areas for solar, such as the tops of car parking areas.	The commenter's preference for the No Action Alternative is acknowledged. Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative.
C58-2	7/20/2019	Schank, Alice	--	Threatened, Endangered, and Candidate Species	My main concern is the desert tortoise and the plants he needs to exist. These gentle giants are prehistoric and do not deserve to be bothered by impact in their desert areas. As you know, they cannot be relocated as the have an inherent GPS system that drives them back to their homelands.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The action alternatives identified by the BLM for this Project would involve mowing the vegetation and allowing tortoise to reoccupy the Project site. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as “disk and roll” or “traditional development methods”). This would allow for a portion of the native vegetation to remain. When construction is complete, the security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas. While the habitat would be altered, the purpose of the alternative is to allow for tortoise reoccupation of the area. The translocations of tortoise for construction and reintroduction after construction were described on page 3-86 of the Draft RMPA/EIS and the impacts assessed also on page 3-86 for the All Mowing Alternative and 3-88 for the Hybrid Alternative and explained further in Master Response 2: Mojave Desert Tortoise (under Tortoise Translocation).
C58-3	7/20/2019	Schank, Alice	--	Wildlife, Migratory Birds, and Special Status Species	I have spent many days and nights camping in the desert, since I was a girl. Being able to enjoy seeing all plants and animals has made an impact on my entire family and has taught us why and how the desert is alive. It is not a vast wasteland as many think. It is full of life of all kinds, some venomous, most not, but ALL of it is to be appreciated and preserved.	The comment is acknowledged. The Draft RMPA/EIS identified mitigation measures to reduce or minimize impacts to desert habitat.
C58-4	7/20/2019	Schank, Alice	--	Alternatives	Please highly consider solar AWAY from these lifeforms and place it where we people have already disturbed the desert, such as rooftops, in the already developed areas.	Refer to Master Response 1: Alternatives for information on why distributed generation and other off-site alternatives were not considered.
C59-1	8/19/2019	Schwartz, Joyce	--	Alternatives	Please consider alternative locations for this project. It is imperative to preserve habitats for critical native plant and animal species.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Adequate space to accommodate the Project was not available in the Dry Lake SEZ, or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises.
C60-1	7/29/2019	Shupe, Chris	--	Alternatives	I would propose they place this solar project on the land adjacent to the Hidden Valley decommissioned coal plant where no one can see it while hiking and recreating.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative

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						<p>screening process. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection.</p> <p>Impacts on recreation were addressed in Section 3.2: Recreation of the Draft RMPA/EIS. Recreational uses on the 7,100-acre (2873-hectare) Project site would be removed. The Project is primarily visible in the valley but not from Valley of Fire State Park, nor from within the Muddy Mountains. It is minimally visible from BSBCB, only once the road is within approximately 0.5 mile (0.8 kilometer) of the facility. More details on the visibility of the facility were provided in Section 3.10: Visual Resources of the Draft RMPA/EIS and the Visual Resources Technical Report, incorporated into the Draft RMPA/EIS by reference. Master Response 6: Change to Visual Resource Management Class and Visual Impacts also provides information on visibility of the Project.</p>
C61-1	8/18/2019	Skye, Teresa	--	Alternatives	This solar project should be relocated to a location that is already disturbed and degraded.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises.
C61-2	8/18/2019	Skye, Teresa	--	Threatened, Endangered, and Candidate Species	This site has too many tortoises, kit foxes, burrowing owls, rare plants, and beautiful Mojave Desert landscapes.	The Draft RMPA/EIS analyzed impacts to desert tortoise, rare plants, and general wildlife species, including burrowing owl and kit fox from implementation of the Project. Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive plants and animals. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBCS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat and vegetation, which would be somewhat reduced through mowing as part of the action alternatives. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.

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C61-3	8/18/2019	Skye, Teresa	--	Alternatives	Or even better, these photovoltaic panels can go on rooftops, over parking lots, and in empty lots in cities.	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative.
C62-1	9/2/2019	Slim, Escalante	--	Recreation	The draft EIS drawings indicate that the only two public access roads to the southwest side of the Muddy Mountains Wilderness Area would be permanently closed. Preservation of public access to public lands has not been adequately addressed in the draft EIS.	Refer to Master Response 7: Recreation for an explanation of how the Draft RMPA/EIS addressed recreational access impacts, including to BSBCB and the Muddy Mountains.
C62-2	9/2/2019	Slim, Escalante	--	Old Spanish National Historic Trail	The draft EIS indicates that portions of historically significant trails would be destroyed by the proposed construction activities and adjacent trail segments not directly obliterated will be highly impacted by dramatic alteration of the view-shed, or removed from public access for the sole benefit of a for-profit business enterprise. The Old Spanish National Historic Trail poster indicates the presumed route of the historic trail and one known archaeological segment.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation and clarifies that no artefacts or physical evidence of the Trail are currently found in the Project area.
C62-3	9/2/2019	Slim, Escalante	--	Old Spanish National Historic Trail	This section of the Old Spanish National Historic Trail has been previously impacted by BLM negligence in permitting off-road vehicle racing events in California Wash.	The comment regarding existing uses in the area is noted. Refer to pages 3-139 and 3-140 of the Draft RMPA/EIS for information on the setting of the OSNH
C62-4	9/2/2019	Slim, Escalante	--	Old Spanish National Historic Trail	These historic trail segments are part of the Old Spanish National Historic Trail corridor which was designated because they were found to “have significant potential for public recreational use or historical interest based on historic interpretation and appreciation”. Therefore they deserve full protection by the BLM and DOI and must remain accessible to the public. Preservation plans for these cultural resources have not been adequately addressed in the Draft RMPA/EIS.	Because the OSNHT in the Project area is considered a corridor that spans the entire valley, it is impossible to minimize or avoid effects to the setting of the OSNHT and to develop the Project. Mowing preserves several of the individual values important to the trail, including the natural resources such as the vegetation, hydrology, and wildlife, but cannot minimize the impacts to the visual setting. Refer to Master Response 5: Old Spanish National Historic Trail for a discussion of additional OSNHT mitigation added to the Final RMPA/EIS and a summary of the one NRHP-eligible Old Spanish Trail segment determined to be in the Project area (although it has been altered to a well-used modern two-track) and Projects impacts. Mitigation, including avoiding the segment, would not avoid adverse effects on this segment.
C62-5	9/2/2019	Slim, Escalante	--	Old Spanish National Historic Trail	The draft EIS indicates that the project would also impact portions of the historic Arrowhead Trail, the first automobile route between Salt Lake City and southern California. In the past, historic trails have not qualified for any protection due to the twisted logic that most historic trails are no longer continuous from end to end due to previous segment destruction and therefore the remaining segments should not be protected. The current National Historic Trails designation is not dependent on the trail being physically evident or continuous. The BLM and DOI are the last resort for protecting these cultural resources.	The Project would not directly impact the Historic Arrowhead Trail route. Section 3.12: Cultural Resources in the Draft RMPA/EIS analyzes indirect effects on the historic Arrowhead Trail Highway/Old Highway 91 in the area. The Project was found to have an adverse indirect visual effect on the historic Arrowhead Trail Highway, because the Project would create some visual contrast as seen from the road. The indirect impacts on this site would be addressed under an MOA (refer to Master Response 5: Old Spanish National Historic Trail), but could remain adverse. The Arrowhead Trail/Old Highway 91 is not a National Historic Trail.
C62-6	9/2/2019	Slim, Escalante	--	Air Quality and Climate Change	The draft EIS does not adequately address containment and ultimate removal of dust control chemicals applied during the life of project.	The commenter appears to be referring to dust palliatives. Dust palliatives may be used in traditional development areas but wouldn't be used in mowed areas. Dust palliative containment on the Project site is required and was addressed on page 3-37 of the Draft RMPA/EIS in terms of ensuring that dust palliatives do not end up in stormwater runoff. Page 3-37 of the Draft RMPA/EIS stated, "Dust palliatives and herbicides can mobilize into stormwater and cause downstream water quality impacts. To minimize those impacts, MM WR-2 requires a Stormwater Quality Monitoring Program that involves using BLM-approved dust palliatives, periodically testing stormwater quality to verify that impacts are not occurring, and making changes to the applications that minimize effects if identified. The program would specify the testing procedures for stormwater quality, frequency, constituents tested, and reporting

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						<p>requirements, including the agencies to which the results must be reported. If standards for water quality are exceeded, the monitoring program requires modification to the palliative use in consultation with BLM." Since stormwater would be monitored at the site and adjustments made to the use of dust palliatives, if needed, the commenter's off-site concerns over impacts should not occur. Refer to Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion for information regarding dust palliatives.</p> <p>Site reclamation after decommissioning of the Proposed Action generally addresses the restoration of disturbed areas that could be impacted by herbicides and palliatives, even though not directly called out in the Draft RMPA/EIS. Page 3-53 of the Draft RMPA/EIS states, "Prior to an NTP, a Site [Reclamation] Plan would be prepared and approved. Implementation of this plan would reduce some of the adverse impacts on native vegetation through the restoration of areas to pre-construction conditions; however, it could still take at least a century to return the site to near pre-disturbance conditions." Some clarifications have been made in the Final RMPA/EIS that the Decommissioning and Site Reclamation Plan would also address soil reclamation to allow for the restoration of the area to pre-construction conditions, as needed.</p>
C62-7	9/2/2019	Slim, Escalante	--	Vegetation and Jurisdictional Waters	Past experience indicates that sensitive desert vegetation will be destroyed by conventional site preparation activities or highly impacted by the mowing alternatives.	<p>Traditional development methods result in the removal of all vegetation and compaction of soils. The mowing method has much less impact to desert vegetation and soils, although it still results in impacts. Although some vegetation may be crushed during construction, the vegetation is expected to rebound as the seed bank and root balls would be maintained. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals and to reduce some of the impacts or severity of impacts on desert tortoises. Additionally, MM VG-1 includes requirements of the Site Restoration Plan and Integrated Weed Management Plan, which would minimize impacts to vegetation. The Draft RMPA/EIS identifies additional mitigation measures in Appendix H to reduce or minimize impacts to desert habitat. Master Response 2: Mojave Desert Tortoise (under Scientific Study) provides additional information on mowing as a new method and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provides additional information on crushed vegetation.</p>
C62-8	9/2/2019	Slim, Escalante	--	Vegetation and Jurisdictional Waters	This level of abuse is unnecessary for this type of installation considering the low heights and slow growth rates of the native vegetation.	Refer to the Response to Comment C62-7.
C62-9	9/2/2019	Slim, Escalante	--	Air Quality and Climate Change	The support structures could be installed with much less alteration of the existing surface conditions and thereby result in less dust mobility and reduce the need for dust control interventions.	The mowing alternatives are consistent with this statement. One of the benefits of the mowing alternatives is that they would reduce dust during construction and operation.
C62-10	9/2/2019	Slim, Escalante	--	Project Description	The use of indiscriminate herbicides such as glyphosate should not be permitted under any circumstances.	Refer to Master Response 2: Mojave Desert Tortoise and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a detailed description of herbicide use and how the use of herbicides was addressed throughout the Draft RMPA/EIS. Herbicide use would be conducted in accordance with BLM Manual 9011: Chemical Pest Control and BLM Handbook H-9011-1: Chemical Pest Control. Standard Operating Procedures or herbicide use (included as an attachment to the POD) would be implemented.

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C62-11	9/2/2019	Slim, Escalante	--	Threatened, Endangered, and Candidate Species	The EIS should also address the potential health effects of herbicide and other chemical application on the desert tortoise population if this endangered wildlife is allowed to re-occupy the site.	Chemical controls were addressed extensively in the Draft RMPA/EIS, and as described in Master Response 2: Mojave Desert Tortoise (under Herbicides and Dust Palliatives). The impacts of herbicide use were addressed throughout the Draft RMPA/EIS (e.g. page 3-48, page 3-49, page 3-50, page 3-55, and page 3-84).
C62-12	9/2/2019	Slim, Escalante	--	Visual Resources	The EIS should explain the necessity of site lighting. Even the use of cut-off fixtures will highly impact the regional nighttime view-shed. If the intended purpose of the lighting is for site security, it is unlikely to be effective in an unoccupied remote location.	Lighting would be installed for safety and as required by applicable codes. As stated in the POD, "[p]ermanent lighting would be provided within the substation and at the Project entry gate. Small domestic fixtures would also be placed at other electrical equipment." The effects of night lighting are analyzed in Section 3.10: Visual Resources and would not affect the dark skies. MM VR-1 requires preparation of a Lighting Plan and use of types of lighting that result in less light pollution, such as low-pressure sodium fixtures.
C62-13	9/2/2019	Slim, Escalante	--	Visual Resources	Off-site monitoring of infra-red cameras or motion sensors would be more useful and have much lower environmental impact.	The solar power plant would be operated remotely 7 days per week using automated facility controls and monitoring systems with SCADA control systems. As stated in Response to Comment C62-12, any lighting installed would be for safety and as required by applicable codes, which may include motion sensor lighting.
C62-14	9/2/2019	Slim, Escalante	--	BLM Management	The EIS should fully outline the options for permit extension or renewal at the end of the 30-year project life. It is difficult to imagine the applicant being willing to shut down and dismantle an operating generating station without an extended legal battle. It is also difficult to imagine the BLM and DOI enforcing such action. The public should be made fully aware that this is effectively a permanent transfer of public land to private corporate control.	The Project is assumed to operate for a period of 30 years in accordance with the ROW grant time frame. The Project site remains under the BLM's jurisdiction throughout the 30-year lease. The unknown factors in decommissioning are acknowledged; however, the action as proposed is a 30-year lease of BLM land and in accordance with NEPA has been evaluated as such. At the maturation of the lease, a new application, POD, and NEPA analysis would be required to continue the operation of the Project. At that time the environmental effects would need to be weighed into the decision to approve or deny an extension of the lease. Decommissioning has been assessed as proposed under the existing application.
C63-1	9/4/2019	Slim, Escalante	--	Old Spanish National Historic Trail	Section 3.14 of the draft EIS describes the Old Spanish National Historic Trail as being a corridor, not a single trail, where travel routes would vary. While this is true, there are many locations where distinctive single-track trails can be found within the corridor. These form because horses and mules prefer to travel single-file. Many trade expeditions and horse thieving raids moved large numbers of livestock over the trail in this manner. This type of single-track trail is well documented in the Emigrant Pass area east of Tecopa CA and can even be seen on Google Earth images. I believe traces of this same type of single-track trail are evident within the proposed project area in California Wash. One example is clearly visible in Google Earth images and extends for a distance of over four miles from WGS84 UTM zone 11S 4039011 m N 700900 m E to 4032860 m N 699444.00 m E as shown in the attached kmz file.	Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation. for a summary of the impact analysis on the extant NRHP-eligible Old Spanish Trail segment and the OSNHT corridor. The only contributing segment to the Old Spanish Trail is the 5,843-foot (1,781-meter) segment within the Project area identified by the study performed under the ARRA. This segment has been converted into a "well-used modern two-track road", as stated on page 3-124 of the Draft RMPA/EIS. None of the other one- or two-track roads in the Project area are contributing segments to the Old Spanish Trail. All were examined during the Class III cultural resources surveys for the Project. No physical evidence of the Trail, such as wagon tracks, have been identified in the Project area.
C63-2	9/4/2019	Slim, Escalante	--	Cultural Resources	These archaeological treasures must be more thoroughly documented for protection before being permanently destroyed by indiscriminate recreation or corporate greed.	Refer to Section 3.12: Cultural Resources of the Draft RMPA/EIS for the analysis of Project impacts on cultural resources and the mitigation measures identified. The BLM and SHPO are developing an MOA and a HPTP in accordance with 36 CFR Section 800.6 that will address adverse effects on historic properties resulting from the Project. Additional mitigation to protect significant cultural resources is also presented in Appendix H.

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C64-1	8/30/2019	Spotts, Richard	--	Alternatives	BLM arbitrarily refused to take these good faith scoping comments seriously, and instead decided to summarily deflect and reject them. I and others asked that much less damaging locations be considered as bona fide alternatives in this DEIS. These alternatives for solar energy included using already degraded BLM lands, BLM areas with lower quality or absent tortoise habitats, and distributed solar panels on roofs of abundant existing structures.	Scoping comments were considered when preparing the Draft RMPA/EIS. Refer to the Scoping Report available on the ePlanning website for a summary of the scoping comments received and considered. Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises.
C64-2	8/30/2019	Spotts, Richard	--	Alternatives	The American "owners" of these BLM lands should not be forced to choose between solar energy development and tortoise conservation because there are feasible alternatives that could achieve both. BLM's failure in this DEIS to fairly consider those alternatives constitutes a fundamental "fatal flaw" under NEPA that BLM can only remedy by rejecting the application through adoption of the "No Action Alternative" or preparing a Supplemental DEIS that includes those alternatives.	The commenter's preference for the No Action Alternative is acknowledged. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA during the alternative screening process as detailed in the Alternatives Report, including off-site alternatives that were considered and dismissed. The CEQ and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives nor do they require an off-site alternative. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA.
C64-3	8/30/2019	Spotts, Richard	--	BLM Management	Given the environmental threats posed by this Gemini Solar proposal and perhaps others in the future, I also strongly support BLM designating this region as a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.	The commenter's preference is acknowledged.
C64-4	8/30/2019	Spotts, Richard	--	Threatened, Endangered, and Candidate Species	This species is listed as threatened under the federal Endangered Species Act (ESA), and BLM has an affirmative legal duty under the ESA to use its authority in furtherance of the conservation and recovery of this and other listed species. BLM ignores this duty in this DEIS where all action alternatives would clearly harm tortoises and their habitat.	The action alternatives included the incorporation of many measures to reduce effects to tortoise to potentially reduce the impacts traditional solar development has had on desert tortoise. Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation.
C64-5	8/30/2019	Spotts, Richard	--	Threatened, Endangered, and Candidate Species	Sadly, despite being ESA listed for about three decades, most tortoise populations continue to decline. This is caused by a number of ongoing threats, largely including continuing cumulative habitat loss and fragmentation from projects like Gemini Solar.	Refer to Master Response 2: Mojave Desert Tortoise for information on desert tortoise impacts, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The Biological Assessment for the Project provides considerable supplemental information on desert tortoise habitat, connectivity, corridors, ACECs, CHUs, and linkages that expands on the information provided in the Draft RMPA/EIS.
C64-6	8/30/2019	Spotts, Richard	--	Threatened, Endangered, and Candidate Species	I am not aware of any peer reviewed published studies that show that vegetation mowing and allowing desert tortoises to re-enter a site with solar panels has resulted in long-term conservation success. I believe that there has never been a similar vegetation mowing project of this proposed size and location in good quality tortoise habitat. As such, the related DEIS alternatives are extremely risky, highly experimental,	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this

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					and recklessly speculative. The proposed mowing has a much greater chance of abject failure and causing significant preventable tortoise mortality.	large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C64-7	8/30/2019	Spotts, Richard	--	Vegetation and Jurisdictional Waters	Mowing Mojave desert vegetation would clearly have significant adverse impacts. These mowing operations, combined with the associated soil disturbance and compaction, would likely stimulate colonization and spread of invasive cheatgrass and mustard, thereby changing the fire ecology and increasing competition for remaining native plants.	The impacts from mowing on native vegetation were analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species.
C64-8	8/30/2019	Spotts, Richard	--	Vegetation and Jurisdictional Waters	Biological soil crusts would also be destroyed, thereby making desert soils more vulnerable to erosion and less productive.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C64-9	8/30/2019	Spotts, Richard	--	Threatened, Endangered, and Candidate Species	These mowing operations would also likely cause collapse of some tortoise burrows, thereby lethally entombing any tortoise occupants, such as the estimated 900 juvenile tortoises that may not be captured prior to those operations.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C64-10	8/30/2019	Spotts, Richard	--	Threatened, Endangered, and Candidate Species	The DEIS proposal to return tortoises to the solar farm with mowed vegetation seems ridiculous. Tortoises have well-established home ranges and strong site fidelity. However, once they are removed, and the vegetation mowed and solar panels erected, the returned tortoises would likely be greatly disoriented, highly stressed, not recognize some normal landscape features, and generally be unable to promptly establish new home ranges and thereby survive.	<p>Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The action alternatives identified by the BLM for this Project would involve mowing the vegetation and allowing tortoise to reoccupy the Project site. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as “disk and roll” or “traditional development methods”). This would allow for a portion of the native vegetation to remain. When construction is complete, the security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas. While the habitat would be altered, the purpose of the alternative is to allow for tortoise reoccupation of the area.</p> <p>Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring</p>

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						Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C64-11	8/30/2019	Spotts, Richard	--	Threatened, Endangered, and Candidate Species	The thermal cover would also be substantially changed. Many tortoise burrows are near or under clumps of creosote or other taller vegetation, but I am not aware of any reports of tortoises constructing burrows under solar panels.	Refer to Master Response 2: Mojave Desert Tortoise (under Alteration of Creosote and Desert Tortoise Habitat) for information on creosote in relation to tortoise burrowing. Shade from the creosote is probably only one factor and the root crowns and original soil accumulation around the creosote will remain in mowed areas. The master response provides additional information on alteration of creosote and desert tortoise habitat and how shade affects desert tortoise. A Long-Term Monitoring Plan desert tortoise will be a requirement of the Section 7 consultation and Biological Opinion. Tortoises have not been allowed into traditional solar developments. The mowing method is a new approach. Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study).
C64-12	8/30/2019	Spotts, Richard	--	Vegetation and Jurisdictional Waters	Rainfall on the solar panels would also change the previous run-off patterns, likely increase soil erosion, and alter vegetation depending upon whether it was under a panel or out in the open.	Changes to water runoff patterns are analyzed in detail in Section 3.5: Water Resources of the Draft RMPA/EIS. Drainage patters are anticipated to be similar to pre-Project conditions in the mowed areas as vegetation, soils, and existing washes would be left in place. As stated on page 3-40, "This alternative would reduce erosion and runoff effects, as most of the site would be left vegetated. Runoff flows would be most similar to existing conditions, and for the purposes of this analysis are assumed to be the same. MMs WR-1, WR-2, WR-3, and GS-1 would still apply to the Project to minimize effects related to erosion and flooding." The same effects would be expected in the mowed areas under the Hybrid Alternative. Tortoise would only be allowed to reoccupy mowed areas. Long-term monitoring and study will be a requirement of the Section 7 consultation and Biological Opinion. The Biological Opinion will include additional methods to address impacts to desert tortoise including any adaptive management to address if methodologies are unsuccessful, as USFWS deems appropriate.
C64-13	8/30/2019	Spotts, Richard	--	Vegetation and Jurisdictional Waters	I believe that these changes would also likely benefit invasive annual weeds rather than most native plant species. Over time, the invasives outcompete the native plants, and the native plants are far more nutritious to tortoises.	The Draft RMPA/EIS analyzed the indirect effect of the Project on the spread and introduction of invasive plant species, as well as the effects of invasive species on desert tortoise habitat and foraging. Extensive measures are included in MM VG-1 to remove and treat red brome and other invasive weeds on the Project site. The mowing alternatives also reduces these impacts as native vegetation would be maintained on-site. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas.
C64-14	8/30/2019	Spotts, Richard	--	Vegetation and Jurisdictional Waters	Aside from serious tortoise concerns, the DEIS action alternatives would remove 700acres of the habitat for Threecorner milkvetch, one of Nevada's rarest plants. The proposed destruction of this substantial fraction of this rare plant's available habitat would seriously jeopardize its survival.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada

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						Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
C64-15	8/30/2019	Spotts, Richard	--	Vegetation and Jurisdictional Waters	As you know, this project site occurs on one of the most undisturbed habitats in the Mojave desert. It provides habitat for several sensitive species, such as the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch, and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBCS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.
C64-16	8/30/2019	Spotts, Richard	--	Vegetation and Jurisdictional Waters	Rare microphyll woodland with catclaw acacia and desert willow also occurs there, and would be destroyed. These groves of deep-rooted desert trees sustain many bird species.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catclaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in 3.7: Wildlife, Migratory Birds, and Special Status Species.
C64-17	8/30/2019	Spotts, Richard	--	Alternatives	As I understand it, 18 Solar Energy Zones were analyzed under NEPA and then designated on BLM lands in the West in 2012. These designated Zones were laudably intended to steer solar energy developments into "smart from the start" locations where resource and user conflicts were likely to be minimized. BLM ignores and undermines this laudable intent and substantial investment in NEPA analysis when it considers ad hoc solar energy proposals outside of these designated Zones.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. No other solar energy zones are located in Clark County. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process. Master Response 1: Alternatives (under the Off-Site Alternatives) describes this Solar PEIS's relevancy to the Project.
C64-18	8/30/2019	Spotts, Richard	--	Visual Resources	Aside from wildlife and native plant concerns, I am appalled that BLM is so willing in the DEIS action alternatives to sacrifice existing VRM designations as well as significant cultural and historic resources. For example, I strongly oppose any BLM downgrading of the region's Visual Class to VRM Class IV. If approved, this project would destroy the view and experience from several popular locations. These locations include the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.	Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and how the Draft RMPA/EIS addressed effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.
C64-19	8/30/2019	Spotts, Richard	--	Visual Resources	The project would be on a popular scenic route that tourists take to the Valley of Fire State Park and Muddy Mountains Wilderness Area. Tourism is very important to Nevada's economy, and visual appeal is strongly linked to what attracts tourists. They want to see remote areas of natural beauty, not massive industrial solar farms in the middle of those areas.	Refer to Master Response 7: Impacts to Recreation for a discussion of the Project's visual impacts to recreationalists traveling to and from Valley of Fire State Park and the Muddy Mountains. As shown on Figure 3.10-1, Valley of Fire State Park is wholly outside the viewshed of the Project. Recreational users of the Muddy Mountains and Valley of Fire State Park

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						would be minimally affected. Some impacts along the initial stretch of Valley of Fire Road towards and returning from Valley of Fire State Park and the Muddy Mountains would occur, but would occur only when the motorist is in close proximity to the solar field, near I-15 (as discussed on page 3-108 to 3-113 of the Draft RMPA/EIS).
C64-20	8/30/2019	Spotts, Richard	--	Socioeconomics and Environmental Justice	If a large solar farm provides about 15 to 20 full time jobs, how many tourism-dependent jobs and community economic multipliers may be jeopardized?	Refer to Master Response 7: Recreation for information on the effects on recreational users, including tourists, and why the Project would not impact recreational use of the Valley of Fire State Park and Muddy Mountains Wilderness Area. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. Socioeconomic impacts are addressed in Section 3.15: Socioeconomics and Environmental Justice and were not found to be adverse and beneficial in some cases due to the increase in employment during construction, operation and maintenance, and decommissioning.
C64-21	8/30/2019	Spotts, Richard	--	Old Spanish National Historic Trail	From a historical perspective, the proposed project would be built on part of the Old Spanish Trail (OST). A large solar farm and its associated new roads and transmission lines would obviously destroy the visual character and integrity of the OST in this location. Ironically, BLM has been working with many partners to try to restore and improve the OST, but this DEIS indicates that the right hand of BLM may not know or care what the left hand is doing.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C64-22	8/30/2019	Spotts, Richard	--	Alternatives	From a NEPA standpoint, it makes no sense that BLM failed to even look at more localized but still much less damaging feasible action alternatives in this DEIS. For example, BLM could and should have analyzed a "reduced footprint" alternative that minimized adverse tortoise impacts.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why reduced footprint alternative was not carried forward for analysis. The CEQ and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives nor do they require a reduced size alternative. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise. While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
C64-23	8/30/2019	Spotts, Richard	--	Alternatives	Likewise, BLM could and should have analyzed an alternative that removes the threat to 700 acres of Threecorner milkvetch habitat.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA. To determine which alternatives are reasonable and subject to inclusion in the RMPA/EIS, an alternative screening was conducted as provided in the Alternatives Report. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. The alternatives were developed to reduce impacts to sensitive resources, including threecorner milkvetch.

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C64-24	8/30/2019	Spotts, Richard	--	Alternatives	To help the Moapa Paiute, BLM could and should have analyzed an alternative where the applicant worked with the tribe to install rooftop solar on existing roofs and in degraded areas proximate to tribal communities. This could help the tribe while eliminating the many resource conflicts at the current proposed location.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Other alternatives such as rooftop solar/distributed generation, including on the Moapa River Indian Reservation adjacent to the Project site, were rejected because they were not feasible alternatives to the Proposed Action. The mowing alternatives were devised to allow for some protection of desert habitat including plants and animals, and reduce some of the impacts or severity of impacts on desert tortoises and threecorner milkvetch individuals.
C65-1	7/21/2019	Stanton, Donna	--	Alternatives	There are many places better suited for the solar project.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Adequate space to accommodate the Project was not available in the Dry Lake SEZ, or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action.
C65-2	7/21/2019	Stanton, Donna	--	Threatened, Endangered, and Candidate Species	We should not have to have the endangered tortoises affected by this.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation.
C65-3	7/21/2019	Stanton, Donna	--	Visual Resources	The Valley of Fire is beautiful and this should be no where near it.	Refer to Master Response 7: Impacts to Recreation for information on how visual impacts to the Valley of Fire State Park were addressed in the Draft RMPA/EIS. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. The Project would not affect the scenic quality of Valley of Fire State Park.
C66-1	8/29/2019	Stevenson, Randy	--	Vegetation and Jurisdictional Waters	In addition to the concerns below, my personal opinion is that solar farms in these fragile environments will render this land useless and literally take centuries to regain its former glory and is irreplaceable.	At the end of the Project's approximately 30-year life, the Applicant will implement a Decommissioning and Site Reclamation Plan that addresses removal of structures and site restoration in conformance with BLM requirements. In areas of traditional development, "Vegetation communities could take as long as a century to naturally and fully recover to pre-disturbance conditions" as stated on page 3-52 of the Draft RMPA/EIS. Reclamation and restoration would occur more quickly in mowed areas compared to areas developed with traditional methods, facilitated by the existing soil structure and perennial vegetation.
C66-2	8/29/2019	Stevenson, Randy	--	Alternatives	I would rather see power companies consider rooftop solar programs or development on already impacted land such as abandoned agricultural lands or over parking lots and other existing infrastructure.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Adequate space to accommodate the Project was not available in the Dry Lake SEZ, or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action.

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C66-3	8/29/2019	Stevenson, Randy	--	BLM Management	"Please select a No Action Alternative for the Gemini Solar Project and designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.	The commenter's preference is acknowledged.
C66-4	8/29/2019	Stevenson, Randy	--	Threatened, Endangered, and Candidate Species	Approval of the project would result in the removal of over 7,100 acres or 11 square miles of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its range. It may need to be up-listed to Endangered status with the cumulative developments happening on its habitat.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for an explanation of how the Draft RMPA/EIS addressed the loss of habitat and impacts to desert tortoise. The desert tortoise is identified as a federally threatened species, as indicated on page 3-80 of the Draft RMPA/EIS, which states, "The only federally threatened, endangered, or candidate species known or with potential to occur in the Project area is the Mojave Desert tortoise." The Biological Assessment, provided as an appendix to the Final RMPA/EIS, provides supplemental information on the species and its impacts, building off of the summary provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) regarding consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action.
C66-5	8/29/2019	Stevenson, Randy	--	Threatened, Endangered, and Candidate Species	There are no peer reviewed studies that show that vegetation mowing and allowing desert tortoises to re-enter a site with solar panels has long-term success. There has never been a vegetation mowing project that is this large.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C66-6	8/29/2019	Stevenson, Randy	--	Threatened, Endangered, and Candidate Species	Vegetation mowing will have very big impacts. All vegetation will be cut. Burrowing animals would be killed and deafened. Many of the es mated 900 juvenile desert tortoises would be missed and killed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C66-7	8/29/2019	Stevenson, Randy	--	Vegetation and Jurisdictional Waters	Biological soil crusts would be destroyed.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C66-8	8/29/2019	Stevenson, Randy	--	Vegetation and Jurisdictional Waters	Invasive annual weeds would move in on the mowed site.	The impacts of the spread and proliferation of invasive weeds associated with the Project is analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species.

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C66-9	8/29/2019	Stevenson, Randy	--	Threatened, Endangered, and Candidate Species	Tortoises would be allowed to re-enter the site. Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. The Biological Opinion will include desert tortoise protection measures to minimize take.
C66-10	8/29/2019	Stevenson, Randy	--	Threatened, Endangered, and Candidate Species	Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and innate conditions, as opposed to external factors (Nussear, Esque, et al. 2007), such as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known.
C66-11	8/29/2019	Stevenson, Randy	--	Vegetation and Jurisdictional Waters	The project would remove 700 acres or one quarter of the habitat for Threecorner milkvetch, one of Nevada's rarest plants.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
C66-12	8/29/2019	Stevenson, Randy	--	Alternatives	A supplemental EIS is needed because the BLM has not fully reviewed the full range of alternatives. The BLM should review off-site alternatives.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA during the alternative screening process as detailed in the Alternatives Report, including off-site alternatives that were considered and dismissed. The CEQ and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives nor do they require an off-site alternative. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA.
C66-13	8/29/2019	Stevenson, Randy	--	Alternatives	The BLM should review a reduced footprint alternative which minimizes the impacts to the desert tortoise.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why reduced footprint alternative was not carried forward for analysis. The alternatives and the alternatives development process were compliant with NEPA. While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
C66-14	8/29/2019	Stevenson, Randy	--	Alternatives	The BLM should review an alternative that cuts out the 700 acres of Threecorner milkvetch habitat. This is one of the rarest plants in Nevada.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the

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						alternatives that were considered in compliance with NEPA. To determine which alternatives are reasonable and subject to inclusion in the RMPA/EIS, an alternative screening was conducted as provided in the Alternatives Report. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. The details of the alternatives' evaluation process are in the Alternative Report, incorporated by reference into the Draft RMPA/EIS, and is available on the ePlanning website. The alternatives were developed to reduce impacts to sensitive resources, including threecorner milkvetch.
C66-15	8/29/2019	Stevenson, Randy	--	Vegetation and Jurisdictional Waters	The project site lies on one of the most undisturbed habitats in the Mojave Desert. It contains biological soil crusts and a large list of native Mojave Desert species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch, and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBBS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.
C66-16	8/29/2019	Stevenson, Randy	--	Vegetation and Jurisdictional Waters	Rare microphyll woodland with catchlaw acacia and desert willow will be destroyed. These groves of deep-rooted desert trees harbor numerous bird species, and should be conserved, not shredded.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catchlaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in 3.7: Wildlife, Migratory Birds, and Special Status Species.
C66-17	8/29/2019	Stevenson, Randy	--	Old Spanish National Historic Trail	The project would be built on part of the historic Old Spanish Trail. The massive build-out of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C66-18	8/29/2019	Stevenson, Randy	--	Visual Resources	The BLM should not downgrade the region's Visual Class to VRM Class IV. The project would destroy the view and experience from several popular locations including the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.	Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and how the Draft RMPA/EIS addressed effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.

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C66-19	8/29/2019	Stevenson, Randy	--	Socioeconomics and Environmental Justice	The project would be on a popular scenic route that tourists take to the Valley of Fire State Park and Muddy Mountains Wilderness Area. Compromising the visual resources of the region has the potential to impact tourism in Nevada. A large-scale solar project of this size only creates about 15-20 full me jobs.	Refer to Master Response 7: Recreation for information on the effects on recreational users, including tourists, and why the Project would not impact recreational use of the Valley of Fire State Park and Muddy Mountains Wilderness Area. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. Socioeconomic impacts are addressed in Section 3.15: Socioeconomics and Environmental Justice and were not found to be adverse and beneficial in some cases due to the increase in employment during construction, operation and maintenance, and decommissioning.
C66-20	8/29/2019	Stevenson, Randy	--	Alternatives	Several thousand acres of land are being developed in the Las Vegas Valley for new housing.	Refer to Master Response 1: Alternatives for information on why rooftop/distributed generation, including installation on new housing developments, was not considered as an alternative (see the responses to the related comments, below).
C66-21	8/29/2019	Stevenson, Randy	--	Alternatives	The amount of space located on the rooftops and over parking lots provides a more efficient alternative for solar panels, and eliminates the need for costly transmission lines.	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length.
C67-1	6/19/2019	Syzdek, David	--	Vegetation and Jurisdictional Waters	This large scale project will permanently disturb over 7,000 acres of fairly pristine Mojave desert creosote shrub ecosystem.	Traditional methods of construction (e.g., disk and roll) would involve vegetation removal and likely result in permanent disturbance of the Project site. The action alternatives developed by the BLM involve use of the mowing method which maintains vegetation on the Project site. The alternatives would involve either a mixture of traditional construction methods and mowing or all mowing to reduce impacts to the native Mojave Desert vegetation and other resources on the Project site. Permanent disturbance areas, such as solar post installation sites, roads, maintenance buildings, and fencing, would still result in the removal of native vegetation. Areas that would be mowed, however, would have a higher chance of recovering post-disturbance. The Draft RMPA/EIS analyzes the impacts associated with the action alternatives, in addition to the Proposed Action.
C67-2	6/20/2019	Syzdek, David	--	Threatened, Endangered, and Candidate Species	This site is habitat to the Federally Threatened desert tortoise and will result in permanent loss of tortoise habitat as well as loss of habitat for other Mojave desert plants and animals.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The action alternatives identified by the BLM for this Project would involve mowing the vegetation and allowing tortoise to reoccupy the Project site. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as “disk and roll” or “traditional development methods”). This would allow for a portion of the native vegetation to remain. When construction is complete, the security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas. While the habitat would be altered, the purpose of the alternative is to allow for tortoise reoccupation of the area.

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C67-3	6/21/2019	Syzdek, David	--	Visual Resources	The site will also impair the views of from travelers along I-15 and Valley of Fire road. A project this large will have a large visual impact from the highway and for desert users in the entire area.	Refer to Master Response 7: Impacts to Recreation for a discussion of the Project's visual impacts to recreationalists traveling to and from Valley of Fire State Park and the Muddy Mountains. As shown on Figure 3.10-1, Valley of Fire State Park is wholly outside the viewshed of the Project. Recreational users of the Muddy Mountains and Valley of Fire State Park would be minimally affected. Some impacts along the initial stretch of Valley of Fire Road towards and returning from Valley of Fire State Park and the Muddy Mountains would occur, but would occur only when the motorist is in close proximity to the solar field, near I-15 (as discussed on page 3-108 to 3-113 of the Draft RMPA/EIS).
C67-4	6/22/2019	Syzdek, David	--	Vegetation and Jursidictional Waters	While renewable energy is desirable, it should not come at such a cost of damaging such a large area of Mojave desert shrub ecosystem.	The Proposed Action would result in the greatest effects on native vegetation, due to use of traditional development methods. As described in Section 2.2 of the Draft RMPA/EIS, two action alternatives were developed for evaluation, the All Mowing Alternative and Hybrid Alternative. These alternatives include the use of mowing as a construction method for all or portions of the Project site, which would allow for existing vegetation to remain at a height of 24 inches (61 centimeters) but not less than 18 inches (46 centimeters) where justified. Use of the mowing methods would minimize impacts to native vegetation and wildlife. Additionally, MM VG-1 includes requirements of the Site Restoration Plan and Integrated Weed Management Plan, which would minimize impacts to vegetation.
C68-1	7/23/2019	Vivier, John	--	Analysis Methods and Data	Land alienation: - Disposal of property. Project study: - Engineering. Construction: - Site works. - Equipment fabrication / importations. - Supplies. - Installations. Exploitation: - Service staff. - Maintenance. All the expenses comprised in these operations determine the cost of one KW/h. Such a cost has been computed in a recent past and is proven to be between 2.5 and 3 times the cost of conventional energy (oil, coal and nuclear).	The cost of the power generated is outside the scope of the NEPA analysis.
C68-2	7/23/2019	Vivier, John	--	Alternatives	In an intelligent world, not a politically passionate one, wind and photovoltaic system (invented in 1923) are not the producers of energy of the future, nuclear is.	Other types of renewable energy projects, including wind, geothermal, and other solar technologies, were rejected through the alternatives screening process from detailed consideration because they would not meet BLM's purpose and need to respond to the Applicant's application under Title V of the FLPMA for a ROW grant to construct, operate, maintain, and decommission a solar PV facility on public lands. Refer to the Alternatives Report, provided with the Draft RMPA/EIS, for additional discussions as to why other technologies were rejected. Nuclear would be rejected for similar reasons. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.
C69-1	8/19/2019	Wallace, Norma	--	Alternatives	Alternative locations must be considered. It's inappropriate to use pristine unique land designated as apriority corridor for this project. Explore rooftops and cover parking lots and garages. There will be jobs anyway. This project in this location is inappropriate, unnecessary and immoral.	Refer to Master Response 1: Alternatives for information on how alternatives were developed under NEPA and why other disturbed lands and distributed generation was not considered as an alternative.
C69-2	8/19/2019	Wallace, Norma	--	Threatened, Endangered, and Candidate Species	The proposed Gemini Solar project in Nevada is expected to destroy several square miles of tortoise habitat identified by the Fish and Wildlife Service as a priority linkage corridor, leaning that losing it could harm the chances of the species' recovery.	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project.

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						Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM has reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS.
C69-3	8/19/2019	Wallace, Norma	--	Vegetation and Jurisdictional Waters	It will also destroy 25% of the remaining habitat of a critically endangered plant.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat, including the quantification of habitat impacts. MM VG-2 would be implemented, which requires the use of drive and crush instead of disk and roll to reduce impacts to the threecorner milkvetch.
C70-1	8/29/2019	Weiner, Teresa R.	--	Threatened, Endangered, and Candidate Species	This industrial project would despoil over 70,000 acres of good quality desert habitat with serious impacts on Federally Threatened and Endangered species.	<p>Neither the Proposed Action nor any of the action alternatives would be over 7,100 acres (2,873 hectares). Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The action alternatives identified by the BLM for this Project would involve mowing the vegetation and allowing tortoise to reoccupy the Project site. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as “disk and roll” or “traditional development methods”). This would allow for a portion of the native vegetation to remain. When construction is complete, the security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas. While the habitat would be altered, the purpose of the alternative is to allow for tortoise reoccupation of the area.</p> <p>The only other federally threatened or endangered species that could be affected by Project activities is the Moapa dace. As analyzed in Section 3.8: Threatened, Endangered, and Candidate Species, the Project would not impact this species.</p>
C70-2	8/29/2019	Weiner, Teresa R.	--	Recreation	From Interstate 15, I have traveled the road to Valley of Fire State Park on dozens of excursions over the past decade. I always stop a few miles outside of the Park and marvel at the dense, beautiful panorama of desert scrub habitat. The unspoiled vista soothes the human visitor’s soul and calms the mind. The entrance to Valley of Fire is important to integrity of the feeling of wildness of this extraordinarily beautiful part of the Nevada desert which has suffered from other industrial solar projects, from grazing on thousands of acres, and from development spreading outward from Las Vegas. This area is a precious gem for Nevada and for all of the visitors from the U.S. and from across the earth and would be a terrible choice for industrial development.	Refer to Master Response 7: Recreation for information on the effects on recreational users, including tourists, and why the Project would not impact recreational use of the Valley of Fire State Park. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information visual impacts. The Draft RMPA/EIS acknowledges adverse visual impacts in the immediate vicinity of the solar facility along Valley of Fire Road.
C70-3	8/29/2019	Weiner, Teresa R.	--	Visual Resources	An eleven-square mile solar project would destroy the view shed for miles around, but particularly for the entryway into the Park.	Section 3.10: Visual Resources of the Draft RMPA/EIS analyzes the impact of the Project on views in the Project area. Adverse effects on scenic

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						quality and viewers due to development of the Project would occur, primarily in the immediate vicinity of the Project. Refer to Master Response 7: Impacts to Recreation for information on the Valley of Fire State Park and why the Project would not impact the park. Valley of Fire State Park is outside of the Project viewshed and the Project and would not be visible to users of the park. The Project would not affect the scenic quality of Valley of Fire State Park. Recreationalists traveling to the park would see the Project for a short time right after exiting Valley of Fire Road, near I-15 and when returning out of the park. The solar facility's visibility is minimal until the viewer is within approximately 0.5-mile (0.8-kilometer) of the facility.
C70-4	8/29/2019	Weiner, Teresa R.	--	BLM Management	The BLM should designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.	The commenter's preference is acknowledged.
C70-5	8/29/2019	Weiner, Teresa R.	--	Threatened, Endangered, and Candidate Species	A most egregious result of approval of the project would result in the loss of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its range.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The action alternatives identified by the BLM for this Project would involve mowing the vegetation and allowing tortoise to reoccupy the Project site. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as “disk and roll” or “traditional development methods”). This would allow for a portion of the native vegetation to remain. When construction is complete, the security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence to allow desert tortoise the opportunity to reoccupy the solar development areas. While the habitat would be altered, the purpose of the alternative is to allow for tortoise reoccupation of the area.
C70-6	8/29/2019	Weiner, Teresa R.	--	Threatened, Endangered, and Candidate Species	It may need to be up-listed to Endangered status with the cumulative impacts from developments happening on its habitat desert-wide.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for an explanation of how the Draft RMPA/EIS addressed the loss of habitat and impacts to desert tortoise. The desert tortoise is identified as a federally threatened species, as indicated on page 3-80 of the Draft RMPA/EIS, which states, "The only federally threatened, endangered, or candidate species known or with potential to occur in the Project area is the Mojave Desert tortoise." The Biological Assessment, provided as an appendix to the Final RMPA/EIS, provides supplemental information on the species and its impacts, building off of the summary provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) regarding consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action.
C70-7	8/29/2019	Weiner, Teresa R.	--	Threatened, Endangered, and Candidate Species	The translocation of desert tortoises has not protected the tortoise. The tortoises often try to go back to their desert burrows and die in the process from dehydration and predation.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives. The master response also provides information regarding studies conducted to determine the effects of translocation of desert tortoise. The findings of several studies have reinforced that use of translocation of desert tortoise does not have deleterious effects. The mowing alternatives allow for tortoise to be returned to their home ranges to potentially reduce the effects solar development has traditionally had on

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						the tortoise populations. The USFWS will issue a Biological Opinion that includes desert tortoise protection measures.
C70-8	8/29/2019	Weiner, Teresa R.	--	Threatened, Endangered, and Candidate Species	There are no peer-reviewed studies that show that vegetation mowing and allowing desert tortoises to re-enter a site with solar panels has long-term success. There has never been a vegetation mowing project that is this large. It is unconscionable to risk the lives of more desert tortoises from a largely untested method.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C70-9	8/29/2019	Weiner, Teresa R.	--	Wildlife, Migratory Birds, and Special Status Species	Vegetation mowing will have very big impacts. All vegetation will be cut. Burrowing animals would be killed and deafened.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C70-10	8/29/2019	Weiner, Teresa R.	--	Vegetation and Jurisdictional Waters	The monstrously large and heavy mowing machines will crush the plants and destroy the biological soil crusts.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C70-11	8/29/2019	Weiner, Teresa R.	--	Vegetation and Jurisdictional Waters	Invasive annual weeds will take over the site.	The impacts of the spread and proliferation of invasive weeds associated with the Project is analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species.
C70-12	8/29/2019	Weiner, Teresa R.	--	Threatened, Endangered, and Candidate Species	Many of the estimated 900 juvenile desert tortoises would be missed and killed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C70-13	8/29/2019	Weiner, Teresa R.	--	Threatened, Endangered, and Candidate Species	When tortoises are allowed to re-enter the site, the invasive plants on which they will have to feed will not be as nutritious as the native plants they have historically relied upon and thrived on.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and adverse effects, and the long-term monitoring that will be employed to address the vegetation health. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological

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						<p>Opinion. The Long-Term Monitoring Plan for the Project will include numerous research and monitoring objectives for desert tortoise and native vegetation.</p> <p>The Draft RMPA/EIS analyzed the indirect effect on invasive plant species on desert tortoise habitat and foraging (refer to Section 3.8: Threatened, Endangered, and Candidate Species) and Master Response 2: Mojave Desert Tortoise (under Weeds and Herbicides and Dust Palliatives). Extensive measures to remove and treat Sahara mustard and other invasive weeds on the Project site are included in MM VG-1 and required to be incorporated into the Integrated Weed Management Plan.</p> <p>A Biological Opinion is expected in early November, which will include additional methods to address impacts to desert tortoise including any adaptive management to address if mowing methods are unsuccessful, as USFWS deems appropriate.</p>
C70-14	8/29/2019	Weiner, Teresa R.	--	Threatened, Endangered, and Candidate Species	Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for an explanation of the activities that would occur during operations and maintenance, and how impacts to tortoise are minimized during operations and maintenance. The Biological Opinion will include desert tortoise protection measures to minimize take.
C70-15	8/29/2019	Weiner, Teresa R.	--	Threatened, Endangered, and Candidate Species	Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and innate conditions, as opposed to external factors (Nussear, Esque, et al. 2007), such as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known.
C70-16	8/19/2019	Weiner, Teresa R.	--	Vegetation and Jurisdictional Waters	The project would remove 700 acres or one quarter of the habitat for Threecorner milkvetch, one of Nevada's rarest plants.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
C70-17	8/29/2019	Weiner, Teresa R.	--	Alternatives	The BLM will only review three action alternatives, all which would be 11 square miles or over 70,000 acres. The BLM should review off-site alternatives.	Neither the Proposed Action nor any of the Alternatives would be over 7,100 acres (2873 hectares). Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process. Adequate space to accommodate the Project was not available in the Dry Lake SEZ, or on private land within Clark County. Contaminated sites, including the decommissioned Reid Gardner Generating Station, were considered as alternative locations for the solar facility, but no sites in the region were found to be sufficiently large enough to support a 690-MW project with appropriate access and transmission connection. Other alternatives such as rooftop solar/distributed generation were rejected because they were not feasible alternatives to the Proposed Action.

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C70-18	8/29/2019	Weiner, Teresa R.	--	Alternatives	Eighteen Solar Energy Zones were designated on BLM lands in the west in 2012. The Zones were created to site energy in areas that have lesser conflicts than the Gemini Solar site.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. No other solar energy zones are located in Clark County. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process. Master Response 1: Alternatives (under the Off-Site Alternatives) describes this Solar PEIS's relevancy to the Project.
C70-19	8/29/2019	Weiner, Teresa R.	--	Alternatives	The BLM should at the very least, review a reduced footprint alternative which minimizes the impacts to the desert tortoise.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why reduced footprint alternative was not carried forward for analysis. The alternatives and the alternatives development process were compliant with NEPA. While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
C70-20	8/29/2019	Weiner, Teresa R.	--	Alternatives	The BLM should review an alternative that cuts out the 700 acres of Threecorner milkvetch habitat. This is one of the rarest plants in Nevada.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA. To determine which alternatives are reasonable and subject to inclusion in the RMPA/EIS, an alternative screening was conducted as provided in the Alternatives Report. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. The details of the alternatives' evaluation process are in the Alternative Report, incorporated by reference into the Draft RMPA/EIS, and is available on the ePlanning website. The alternatives were developed to reduce impacts to sensitive resources, including threecorner milkvetch.
C70-21	8/29/2019	Weiner, Teresa R.	--	Alternatives	a. The BLM should review a distributed generation alternative.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C70-22	8/19/2019	Weiner, Teresa R.	--	Vegetation and Jurisdictional Waters	b. The project site lies on one of the most undisturbed habitats in the Mojave Desert. It contains biological soil crusts and a large list of native Mojave Desert species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch, and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment

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						during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBCS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.
C70-23	8/29/2019	Weiner, Teresa R.	--	Vegetation and Jurisdictional Waters	c. Rare microphyll woodland with catclaw acacia and desert willow will be destroyed. These groves of deep-rooted desert trees harbor numerous bird species, and should be conserved, not shredded.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catclaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in 3.7: Wildlife, Migratory Birds, and Special Status Species.
C70-24	8/29/2019	Weiner, Teresa R.	--	Old Spanish National Historic Trail	d. The project would be built on part of the historic Old Spanish Trail. The massive build-out of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C70-25	8/29/2019	Weiner, Teresa R.	--	Visual Resources	e. The BLM should not downgrade the region's Visual Class to VRM Class IV. The project would destroy the view and experience from several popular locations including the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.	<p>The change in VRM Class in the Project area from a Class III to a Class IV is proposed to be compatible with the solar development and particularly the visibility of the proposed transmission structure. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for additional explanation of how the Draft RMPA/EIS addressed the change to VRM class and visual impacts.</p> <p>Refer to Master Response 7: Impacts to Recreation for information on the Valley of Fire State Park and why the Project would not have impacts on the park. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. The Project would not affect the scenic quality of Valley of Fire State Park.</p>
C70-26	8/29/2019	Weiner, Teresa R.	--	Socioeconomics and Environmental Justice	Compromising the visual resources of the region has the potential to impact tourism in Nevada. A large-scale solar project of this size only creates about15-20 full time jobs.	Refer to Master Response 7: Recreation for information on the effects on recreational users, including tourists, and why the Project would not impact recreational use of the Valley of Fire State Park and Muddy Mountains Wilderness Area. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. Socioeconomic impacts are addressed in Section 3.15: Socioeconomics and Environmental Justice and were not found to be adverse and beneficial in some cases due to the increase in employment during construction, operation and maintenance, and decommissioning.
C70-27	8/29/2019	Weiner, Teresa R.	--	Alternatives	Several thousand acres of land are being developed in the Las Vegas Valley for new housing.	Refer to Master Response 1: Alternatives for information on why rooftop/distributed generation, including installation on new housing developments, was not considered as an alternative (see the responses to the related comments, below).

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C70-28	8/29/2019	Weiner, Teresa R.	--	Alternatives	The amount of space located on the rooftops and over parking lots provides a more efficient alternative for solar panels, and eliminates the need for costly, inefficient transmission lines.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length.
C71-1	8/18/2019	Wiegman, Sherri	--	Threatened, Endangered, and Candidate Species	The proposed Gemini Solar project in Nevada is expected to destroy several square miles of tortoise habitat identified by the Fish and Wildlife Service as a PRIORITY LINKAGE CORRIDOR. Destroying this acreage, means it will harm the chances of the species' recovery.	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project. Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM has reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.
C71-2	8/18/2019	Wiegman, Sherri	--	Vegetation and Jurisdictional Waters	Further, it will also destroy 25% of the remaining habitat of a critically endangered plant.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat, including the quantification of habitat impacts. MM VG-2 would be implemented, which requires the use of drive and crush instead of disk and roll to reduce impacts to the threecorner milkvetch.
C72-1	8/25/2019	Williams, Joshua	--	Alternatives	Please select a No Action Alternative for the Gemini Solar Project and designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.	The commenter's preference for is acknowledged.
C72-2	8/25/2019	Williams, Joshua	--	Threatened, Endangered, and Candidate Species	Approval of the project would result in the removal of over 7,100 acres or 11 square miles of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its range. It may need to be up-listed to Endangered status with the cumulative developments happening on its habitat.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for an explanation of how the Draft RMPA/EIS addressed the loss of habitat and impacts to desert tortoise. The desert tortoise is identified as a federally threatened species, as indicated on page 3-80 of the Draft RMPA/EIS, which states, "The only federally threatened, endangered, or candidate species known or with potential to occur in the Project area is the Mojave Desert tortoise." The Biological Assessment, provided as an appendix to the Final RMPA/EIS, provides supplemental information on the species and its impacts, building off of the summary provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) regarding consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action.

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C72-3	8/25/2019	Williams, Joshua	--	Threatened, Endangered, and Candidate Species	There are no peer reviewed studies that show that vegetation mowing and allowing desert tortoises to re-enter a site with solar panels has long-term success. There has never been a vegetation mowing project that is this large.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C72-4	8/25/2019	Williams, Joshua	--	Threatened, Endangered, and Candidate Species	Vegetation mowing will have very big impacts. All vegetation will be cut. Burrowing animals would be killed and deafened. Many of the estimated 900 juvenile desert tortoises would be missed and killed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C72-5	8/25/2019	Williams, Joshua	--	Vegetation and Jurisdictional Waters	Biological soil crusts would be destroyed.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C72-6	8/25/2019	Williams, Joshua	--	Vegetation and Jurisdictional Waters	Invasive annual weeds would move in on the mowed site.	The impacts of the spread and proliferation of invasive weeds associated with the Project is analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species.
C72-7	8/25/2019	Williams, Joshua	--	Threatened, Endangered, and Candidate Species	Tortoises would be allowed to re-enter the site. Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for a discussion of operations and maintenance activities that would occur, the intensity and frequency, and the protections required to minimize effects on desert tortoise. The Biological Opinion will include desert tortoise protection measures to minimize take.
C72-8	8/25/2019	Williams, Joshua	--	Threatened, Endangered, and Candidate Species	Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and innate conditions, as opposed to external factors (Nussear, Esque, et al. 2007), such as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known.
C72-9	8/25/2019	Williams, Joshua	--	Vegetation and Jurisdictional Waters	The project would remove 700 acres or one quarter of the habitat for Threecorner milkvetch, one of Nevada's rarest plants.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species

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						present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
C72-10	8/25/2019	Williams, Joshua	--	Alternatives	A supplemental EIS is needed because the BLM has not fully reviewed the full range of alternatives. The BLM should review off-site alternatives.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA during the alternative screening process as detailed in the Alternatives Report, including off-site alternatives that were considered and dismissed. The CEQ and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives nor do they require an off-site alternative. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA.
C72-11	8/25/2019	Williams, Joshua	--	Alternatives	The BLM should review a reduced footprint alternative which minimizes the impacts to the desert tortoise.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why reduced footprint alternative was not carried forward for analysis. The alternatives and the alternatives development process were compliant with NEPA. While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.
C72-12	8/25/2019	Williams, Joshua	--	Alternatives	The BLM should review an alternative that cuts out the 700 acres of Threecorner milkvetch habitat. This is one of the rarest plants in Nevada.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the acreage of impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA. To determine which alternatives are reasonable and subject to inclusion in the EIS, an alternative screening was conducted as provided in the Alternatives Report. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified. Development area F, with the highest found occurrences of threecorner milkvetch was avoided in all alternatives. The details of the alternatives' evaluation process are in the Alternative Report, incorporated by reference into the Draft RMPA/EIS and was available on the ePlanning website. The alternatives were developed to reduce impacts to sensitive resources, including threecorner milkvetch.
C72-13	8/25/2019	Williams, Joshua	--	Alternatives	The BLM should review a distributed generation alternative.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.

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C72-14	8/25/2019	Williams, Joshua	--	Vegetation and Jurisdictional Waters	The project site lies on one of the most undisturbed habitats in the Mojave Desert. It contains biological soil crusts and a large list of native Mojave Desert species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch, and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBCS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information on desert tortoise; bighorn sheep and migratory birds; and biocrust, threecorner milkvetch, and Nye milkvetch, respectively.
C72-15	8/25/2019	Williams, Joshua	--	Vegetation and Jurisdictional Waters	Rare microphyll woodland with catclaw acacia and desert willow will be destroyed. These groves of deep-rooted desert trees harbor numerous bird species, and should be conserved, not shredded.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catclaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in 3.7: Wildlife, Migratory Birds, and Special Status Species.
C72-16	8/25/2019	Williams, Joshua	--	Old Spanish National Historic Trail	The project would be built on part of the historic Old Spanish Trail. The massive build-out of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C72-17	8/25/2019	Williams, Joshua	--	Visual Resources	The BLM should not downgrade the region's Visual Class to VRM Class IV. The project would destroy the view and experience from several popular locations including the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.	The change in VRM Class in the Project area from a Class III to a Class IV is proposed to be compatible with the solar development and particularly the visibility of the proposed transmission structure. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for additional explanation of how the Draft RMPA/EIS addressed the change to VRM class and visual impacts. Refer to Master Response 7: Impacts to Recreation for information on the Valley of Fire State Park and why the Project would not have impacts on the park. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. The Project would not affect the scenic quality of Valley of Fire State Park.
C72-18	8/25/2019	Williams, Joshua	--	Socioeconomics and Environmental Justice	The project would be on a popular scenic route that tourists take to the Valley of Fire State Park and Muddy Mountains Wilderness Area. Compromising the visual resources of the region has the potential to impact tourism in Nevada. A large-scale solar project of this size only creates about 15-20 full time jobs.	Refer to Master Response 7: Recreation for information on the effects on recreational users, including tourists, and why the Project would not impact recreational use of the Valley of Fire State Park and Muddy Mountains Wilderness Area. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and effects on the Muddy Mountains

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						<p>Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. The Draft RMPA/EIS acknowledges adverse visual impacts in the immediate vicinity of the solar facility along Valley of Fire Road.</p> <p>Socioeconomic impacts are addressed in Section 3.15: Socioeconomics and Environmental Justice and were not found to be adverse and beneficial in some cases due to the increase in employment during construction, operation and maintenance, and decommissioning.</p>
C72-19	8/25/2019	Williams, Joshua	--	Alternatives	Several thousand acres of land are being developed in the Las Vegas Valley for new housing.	Refer to Master Response 1: Alternatives for information on why rooftop/distributed generation, including installation on new housing developments, was not considered as an alternative (see the responses to the related comments, below).
C72-20	8/25/2019	Williams, Joshua	--	Alternatives	The amount of space located on the rooops and over parking lots provides a more efficient` alternative for solar panels, and eliminates the need for costly transmission lines. This easily justifies a No Action Alternative for the Gemini Solar Project.	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length.
C73-1	6/27/2019	Williams, Ted	--	BLM Management	The purpose of the BLM land is not to use it up putting in solar fields. The purpose is to keep the land pristine for wild plants and animals for us and all those who follow us. Using up 7,100 acres for a solar plant is a huge waste of that valuable land. That is a terrible misuse of the land. Preserve and protect!!	In accordance with FLPMA, public lands are to be managed for multiple uses in a manner that accounts for a combination of balanced and diverse resources uses that consider the long-term needs of future generations for renewable and non-renewable resources (as is stated in the Final RMPA/EIS). Refer to the Master Response 1: Alternatives for a discussion of the BLM's purpose and need to respond to the ROW application and the consideration of environmental impacts during the NEPA process required for this Project. Refer to the Draft RMPA/EIS for the analysis of impacts on and mitigation measures addressing cultural, historic, biological, visual, and natural resources.
C74-1	7/14/2019	Williams, Timothy	--	Visual Resources	Please find a different area for this MASSIVE project. it is so near to the stunningly beautiful Valley of Fire state park (which would ruin the uniqueness of it) and the road that travels to it.	Refer to Master Response 7: Impacts to Recreation for information on the Valley of Fire State Park and why the Project would not impact the park. Valley of Fire State Park is outside of the Project viewshed and the Project and would not be visible to users of the park. The Project would not affect the scenic quality of Valley of Fire State Park and would not impact the National Natural Landmark. Recreationalists traveling to the park would see the Project for a short time right after exiting Valley of Fire Road, near I-15 and when returning out of the park. The solar facility's visibility is minimal until the viewer is within approximately 0.5-miles of the facility.
C74-2	7/14/2019	Williams, Timothy	--	Threatened, Endangered, and Candidate Species	And not to speak of the critical habitat that would be pushed out of the area.	Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) for more information on critical habitat. There is no designated Critical Habitat, as defined by the ESA, within the Project site boundaries. The nearest designated Critical Habitat for desert tortoise is within the Mormon Mesa CHU, which overlaps with the Coyote Springs ACEC to the northwest of the Project area, far outside of the area of direct effects. The Project would not result in direct effects on Critical Habitat for desert tortoise or any primary constituent elements.

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C74-3	7/14/2019	Williams, Timothy	--	Alternatives	A new thing that is being looked at now is using old abandoned mines or areas that have already been disturbed for these type of projects.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process including previously disturbed sites.
C75-1	9/4/2019	Wilson, Jim	--	Alternatives	The technology now exists to do the right thing the right way--local energy generation--instead of the wrong way. If these people want to continue to denigrate landscapes, let them denigrate their own and not lands in the public domain.	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative.
C76-1	7/20/2019	Wolf, Mary	--	Threatened, Endangered, and Candidate Species	The desert tortoise is and has been a threatened species under the Endangered Species Act for quite some time now. I personally don't understand how undisturbed habitat is prime location for new development when there already exists disturbed habitats from previous developments that could be used for future developments;	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives and mitigation. The Biological Assessment for the Project provides considerable supplemental information on desert tortoise habitat, connectivity, corridors, ACECs, CHUs, and linkages that expands on the information provided in the Draft RMPA/EIS.
C76-2	7/20/2019	Wolf, Mary	--	Alternatives	along with the fact that Las Vegas is ripe with under-utilized roofs that could also be used for solar farms in the form of parking garages, casinos, shopping centers, etc, it's baffling we have to look to currently inhabited space rich with desert wildlife diversity.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA during the alternative screening process as detailed in the Alternatives Report, including off-site alternatives and distributed generation that were considered and dismissed. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA.
C76-3	7/20/2019	Wolf, Mary	--	Alternatives	moving the project to an existing solar energy zone or to already-disturbed lands identified by the EPA's RE-Powering America's Land initiative.	Refer to Master Response 1: Alternatives for information regarding off-site alternatives that were considered and dismissed during the alternative screening process, including in the Dry Lake SEZ. Adequate space for a 690-MW solar facility is not available in the Dry Lake SEZ. Previously disturbed sites were considered and are not available at this scale. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.
C76-4	7/20/2019	Wolf, Mary	--	Vegetation and Jurisdictional Waters	studying the potential impacts of the vegetation mowing process on desert soils and plants, to include the likelihood that such mowing will lead to more non-native species taking root (can the native species even use these as a food resource?)	The impacts of the spread and proliferation of invasive weeds associated with the Project is analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species. Typically, non-native plant species do not provide as valuable a food source or shelter to wildlife as native plants.
C76-5	7/20/2019	Wolf, Mary	--	Threatened, Endangered, and Candidate Species	evaluating the claims that desert tortoises will be able to thrive on the site after vegetation i mowed, soils are compacted, non-native plants take root, and solar panels are installed. The BLM's environmental analysis currently ignores how these negative impacts are likely to make it impossible to reintroduce desert tortoises or other wildlife to the site (translocations have yet to be proven a viable option for desert tortoises, translocation efficacy remains inconsistent).	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements

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C76-6	7/20/2019	Wolf, Mary	--	Threatened, Endangered, and Candidate Species	Evaluating how construction of the massive solar project could risk genetic linkages across th desert tortoise's range (will this project create or decrease necessary corridors for genetic diversity necessary for species survival?).	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project.</p> <p>Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM has reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.</p>
C76-7	7/20/2019	Wolf, Mary	--	Wildlife, Migratory Birds, and Special Status Species	Evaluating the potential impact of this project on golden eagle and desert bighorn sheep foragin habitat. Bighorn and golden eagles have been known to traverse these wildlands.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for information on impacts to golden eagle habitat and how it was addressed in the Draft RMPA/EIS and for a discussion of why bighorn sheep would not be impacted by the Project.
C77-1	8/20/2019	Wollman, Nan	--	Threatened, Endangered, and Candidate Species	The proposed Gemini Solar project in Nevada is expected to destroy several square miles of tortoise habitat identified by the Fish and Wildlife Service as a priority linkage corridor, meaning that losing it could harm the chances of the species' recovery.	<p>Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project.</p> <p>Refer to Master Response 2: Mojave Desert Tortoise (under Impacts to Connectivity and Gene Flow) regarding desert tortoise gene flow, connectivity, and assessment of impacts as well as the role of USFWS during the ongoing Section 7 consultation for this Project. The Project is located in both Priority 1 and 2 Desert Tortoise Connectivity Habitat (USFWS 2011). The BLM has reviewed and evaluated the Project's impacts on desert tortoise through habitat loss and population connectivity in the Biological Assessment and Draft RMPA/EIS. Refer to the analysis in Section 3.8: Threatened, Endangered, and Candidate Species of the Draft RMPA/EIS. Additionally, the BLM has consulted with the USFWS on how to minimize impacts to tortoises. The priority linkages were identified and apply to projects subject to the ROD for the Solar PEIS.</p> <p>Refer to Master Response 1: Alternatives regarding this Project's status with regards to the Solar PEIS (2014). While the management criteria under the ROD for the 2014 Solar PEIS do not apply to this project, gene flow and connectivity were addressed in detail in the Draft RMPA/EIS and Biological Assessment, available with the Final RMPA/EIS.</p>
C77-2	8/20/2019	Wollman, Nan	--	Vegetation and Jurisdictional Waters	It will also destroy 25% of the remaining habitat of a critically endangered plant.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of the impacts to threecorner milkvetch and measures to reduce impacts to habitat.

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						including the quantification of habitat impacts. MM VG-2 would be implemented, which requires the use of drive and crush instead of disk and roll to reduce impacts to the threecorner milkvetch.
C78-1	9/4/2019	Youngelson, Noah	--	BLM Management	Please select a No Action Alternative for the Gemini Solar Project and designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.	The commenter's preference for the No Action Alternative is acknowledged.
C78-2	9/4/2019	Youngelson, Noah	--	Threatened, Endangered, and Candidate Species	Approval of the project would result in the removal of over 7,100 acres or 11 square miles of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its range. It may need to be up-listed to Endangered status with the cumulative developments happening on its habitat.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for an explanation of how the Draft RMPA/EIS addressed the loss of habitat and impacts to desert tortoise. The desert tortoise is identified as a federally threatened species, as indicated on page 3-80 of the Draft RMPA/EIS, which states, "The only federally threatened, endangered, or candidate species known or with potential to occur in the Project area is the Mojave Desert tortoise." The Biological Assessment, provided as an appendix to the Final RMPA/EIS, provides supplemental information on the species and its impacts, building off of the summary provided in the Draft RMPA/EIS. Refer to Master Response 2: Mojave Desert Tortoise (under several subheadings) regarding consultation with the USFWS under Section 7 of the ESA and the USFWS's role to determine the acceptable impacts to desert tortoise for this action.
C78-3	9/4/2019	Youngelson, Noah	--	Threatened, Endangered, and Candidate Species	There are no peer reviewed studies that show that vegetation mowing and allowing desert tortoises to re-enter a site with solar panels has long-term success. There has never been a vegetation mowing project that is this large.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) regarding the mowing alternative and the impacts from that alternative on desert tortoise. Mowing within the solar facility and allowing desert tortoise to reoccupy the Project site has never been attempted on this large of scale and is a new technique. No long-term data is available as this technique is new. Comparing the Project to another site would not be possible. A Long-Term Monitoring Plan will be a requirement of the Section 7 consultation and Biological Opinion. The Long-Term Monitoring Plan and Site Restoration Plan would be implemented and include monitoring and reporting requirements.
C78-4	9/4/2019	Youngelson, Noah	--	Wildlife, Migratory Birds, and Special Status Species	Vegetation mowing will have very big impacts. All vegetation will be cut. Burrowing animals would be killed and deafened.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
C78-5	9/4/2019	Youngelson, Noah	--	Threatened, Endangered, and Candidate Species	Many of the estimated 900 juvenile desert tortoises would be missed and killed.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.

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C78-6	9/4/2019	Youngelson, Noah	--	Vegetation and Jurisdictional Waters	Biological soil crusts would be destroyed.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to biocrust and how it is addressed in the Site Restoration Plan. Biocrust impacts would be reduced in mowed areas and areas of drive and crush, but the Draft RMPA/EIS acknowledges that adverse effects would still occur, even under the mowing alternatives.
C78-7	9/4/2019	Youngelson, Noah	--	Vegetation and Jurisdictional Waters	Invasive annual weeds would move in on the mowed site	The impacts of the spread and proliferation of invasive weeds associated with the Project is analyzed in the Draft RMPA/EIS. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas and how MM VG-2 includes numerous provisions to reduce the spread of invasive species.
C78-8	9/4/2019	Youngelson, Noah	--	Threatened, Endangered, and Candidate Species	Tortoises would be allowed to re-enter the site. Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance.	Refer to Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance) for a discussion of operations and maintenance activities that would occur, the intensity and frequency, and the protections required to minimize effects on desert tortoise. The Biological Opinion will include desert tortoise protection measures to minimize take.
C78-9	9/4/2019	Youngelson, Noah	--	Threatened, Endangered, and Candidate Species	Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.	Refer to Master Response 2: Mojave Desert Tortoise (under Shade from Panels). Hibernation of desert tortoise is more likely driven by internal and innate conditions, as opposed to external factors (Nussear, Esque, et al. 2007), such as the shade from solar panels. How the shade from solar panels would affect tortoise behavior is not known.
C78-10	9/4/2019	Youngelson, Noah	--	Vegetation and Jurisdictional Waters	The project would remove 700 acres of the habitat for Threecorner milkvetch, one of Nevada's rarest plants.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of how impacts to rare plants were addressed in the Draft RMPA/EIS and the total impacts to threecorner milkvetch, including direct, indirect and cumulative impacts. Impacts from mowing on the threecorner milkvetch species present on the Project site would be mitigated by seed collection, weed treatment, and monitoring, as required by MM VG-1 and MM VG-2. Milkvetch is recognized in the Draft RMPA/EIS as one of Nevada's rarest plants, as stated on page 3-45, "Threecorner milkvetch is the rarest of plant species found in the study area. It is listed by the State of Nevada as Critically Endangered/Fully Protected, by BLM as Sensitive, by the Nevada Natural Heritage Program (NNHP) as At-Risk, and by the Nevada Native Plant Society (NNPS) as Threatened."
C78-11	9/4/2019	Youngelson, Noah	--	Alternatives	A supplemental EIS is needed because the BLM has not fully reviewed the full range of alternatives. The BLM should review off-site alternatives.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA during the alternative screening process as detailed in the Alternatives Report, including off-site alternatives that were considered and dismissed. The CEQ and the BLM do not specify the number of alternatives that are required to be analyzed to be considered a reasonable range of alternatives nor do they require an off-site alternative. The alternatives were developed to reduce impacts to sensitive resources, including desert tortoise and threecorner milkvetch individuals. The alternatives and the alternatives development process were compliant with NEPA.
C78-12	9/4/2019	Youngelson, Noah	--	Alternatives	The BLM should review a reduced footprint alternative which minimizes the impacts to the desert tortoise.	Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA, including why

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						<p>reduced footprint alternative was not carried forward for analysis. The alternatives and the alternatives development process were compliant with NEPA.</p> <p>While the size of the development was not altered in the alternatives, it should be noted that MM WILD-1 in Appendix H requires disturbance areas to be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads, prior to issuance of an NTP for construction, which would further reduce or allow for avoidance of some resources.</p>
C78-13	9/4/2019	Youngelson, Noah	--	Alternatives	The BLM should review an alternative that cuts out the 700 acres of Threecorner milkvetch habitat. This is one of the rarest plants in Nevada.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to threecorner milkvetch and measures to reduce impacts to habitat. Refer to Master Response 1: Alternatives for information on the alternatives that were considered in compliance with NEPA. To determine which alternatives are reasonable and subject to inclusion in the EIS, an alternative screening was conducted as provided in the Alternatives Report. Through the alternatives screening, two practical and feasible action alternatives to the Proposed Action were identified. Development area F, with the highest found occurrences of threecorner milkvetch was avoided in all alternatives. The details of the alternatives' evaluation process are in the Alternative Report, incorporated by reference into the Draft RMPA/EIS and was available on the ePlanning website. The alternatives were developed to reduce impacts to sensitive resources, including threecorner milkvetch.
C78-14	9/4/2019	Youngelson, Noah	--	Alternatives	The BLM should review a distributed generation alternative.	Refer to Master Response 1: Alternatives for information on the alternatives' evaluation process including why distributed generation was not considered as an alternative.
C78-15	9/4/2019	Youngelson, Noah	--	Vegetation and Jurisdictional Waters	The project site lies on one of the most undisturbed habitats in the Mojave Desert. It contains biological soil crusts and a large list of native Mojave Desert species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.	The Draft RMPA/EIS analyzed impacts to biological soil crusts, threecorner milkvetch, and Nye milkvetch, and general wildlife species, including burrowing owl, kit fox, and American badger. No Gila monster were observed during Project surveys; however, the impact assessment on page 3-70 of the Draft RMPA/EIS accounted for impacts to general wildlife species. Mitigation measures were identified in Appendix H to reduce impacts to wildlife and sensitive species, including MM WILD-1 through MM WILD-6. These measures are in Appendix H and include reducing the Project footprint to the minimum size needed to generate 690-MW, requiring a biological monitor to ensure compliance, implementing a worker environmental training, reducing potential for wildlife entrapment during construction, reducing potential to direct harm to wildlife from construction, protecting wildlife from construction water ponds, including a BBBS, and minimizing impacts to nesting birds. The Draft RMPA/EIS acknowledged the impacts from loss of habitat, which are somewhat reduced through mowing. Master Response 2: Mojave Desert Tortoise, Master Response 3: Bighorn Sheep and Migratory Birds, and Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities provide additional information.
C78-16	9/4/2019	Youngelson, Noah	--	Vegetation and Jurisdictional Waters	Rare microphyll woodland with catclaw acacia and desert willow will be destroyed. These groves of deep-rooted desert trees harbor numerous bird species, and should be conserved, not shredded.	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities , for a discussion of the impacts to vegetation communities including catclaw acacia shrubland alliance. Microphyll woodland and desert willow were not identified in the

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						Project area. Impacts to nesting birds was addressed in the Draft RMPA/EIS in 3.7: Wildlife, Migratory Birds, and Special Status Species.
C78-17	9/4/2019	Youngelson, Noah	--	Old Spanish National Historic Trail	The project would be built on part of the historic Old Spanish Trail. The massive build-out of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C78-18	9/4/2019	Youngelson, Noah	--	Visual Resources	The BLM should not downgrade the region's Visual Class to VRM Class IV. The project would destroy the view and experience from several popular locations including the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway.	<p>The change in VRM Class in the Project area from a Class III to a Class IV is proposed to be compatible with the solar development and particularly the visibility of the proposed transmission structure. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for additional explanation of how the Draft RMPA/EIS addressed the change to VRM class and visual impacts.</p> <p>Refer to Master Response 7: Impacts to Recreation for information on the Valley of Fire State Park and why the Project would not have impacts on the park. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. The Project would not affect the scenic quality of Valley of Fire State Park.</p>
C78-19	9/4/2019	Youngelson, Noah	--	Socioeconomics and Environmental Justice	The project would be on a popular scenic route that tourists take to the Valley of Fire State Park and Muddy Mountains Wilderness Area. Compromising the visual resources of the region has the potential to impact tourism in Nevada. A large-scale solar project of this size only creates about 15-20 full time jobs.	Refer to Master Response 7: Recreation for information on the effects on recreational users, including tourists, and why the Project would not impact recreational use of the Valley of Fire State Park and Muddy Mountains Wilderness Area. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for information regarding the change in VRM class and effects on the Muddy Mountains Wilderness Area, the Valley of Fire Road, and the Bitter Springs Backcountry Byway. Valley of Fire State Park is outside of the Project viewshed and the Project would not be visible to users of the park. Socioeconomic impacts are addressed in Section 3.15: Socioeconomics and Environmental Justice and were not found to be adverse and beneficial in some cases due to the increase in employment during construction, operation and maintenance, and decommissioning.
C78-20	9/4/2019	Youngelson, Noah	--	Alternatives	Several thousand acres of land are being developed in the Las Vegas Valley for new housing.	Refer to Master Response 1: Alternatives for information on why rooftop/distributed generation, including installation on new housing developments, was not considered as an alternative (see the responses to the related comments, below).
C78-21	9/4/2019	Youngelson, Noah	--	Alternatives	The amount of space located on the rooftops and over parking lots provides a more efficient alternative for solar panels, and eliminates the need for costly transmission lines.	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative. The Project is sited in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length.
C79-1	6/12/2019	Youngelson, Noah	--	Vegetation and Jurisdictional Waters	However, covering over sensitive desert ecosystems with large scale solar installations is not the way to go. Clean energy may reduce carbon emissions, but it can still be disastrous for biodiversity; scientists have regularly identified habitat conservation as the key to preventing extinction and improving the resilience of species already under pressure by the effects of climate change.	Adverse impacts to desert tortoise from traditional solar development are acknowledged. To reduce the impacts to desert habitat resulting from the Project, mowing alternatives were devised to allow for some protection of desert habitat including plants and animals and to reduce some of the impacts or severity of impacts on desert tortoises. Under the action alternatives, much of the vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as “disk and roll” or

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						"traditional development methods"). The Draft RMPA/EIS identified mitigation measures to reduce or minimize impacts to desert habitat. Master Response 2: Mojave Desert Tortoise provides additional information on desert tortoise impacts and mitigation.
C79-2	6/13/2019	Youngelson, Noah	--	Threatened, Endangered, and Candidate Species	Arevia Power's plans to destroy these Mojave wildlands will displace or kill nearly at least 260 desert tortoises, and dozens of kit foxes and burrowing owls, according to the draft environmental impact statement.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives. The master response also provides information regarding studies conducted to determine the effects of translocation of desert tortoise. The findings of several studies have reinforced that use of translocation of desert tortoise does not have deleterious effects. The mowing alternatives allow for tortoise to be returned to their home ranges to potentially reduce the effects solar development has traditionally had on the tortoise populations. The USFWS will issue a Biological Opinion that includes desert tortoise protection measures. The Draft RMPA/EIS analyzed impacts on other wildlife species including kit fox and burrowing owl in Section 3.7: Wildlife, Migratory Birds, and Special Status Species.
C79-3	6/14/2019	Youngelson, Noah	--	Vegetation and Jurisdictional Waters	The area is also home to rare plants, including the beleaguered threecorner milkvetch. According to the Department of Interior report, " [m]itigating for threecorner milkvetch habitat loss is no longer possible. Habitat conservation is the method needed to ensure the long-term survival of this species. Threecorner milkvetch is currently state-listed as critically endangered."	Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for a discussion of impacts to threecorner milkvetch and measures to reduce impacts to habitat. Development area F, with the highest found occurrences of threecorner milkvetch, was avoided in all alternatives. Impacts to other habitats could still occur. Mowing and drive and crush methods reduce effects by maintaining the soils and potentially, the seed bank.
C79-4	6/15/2019	Youngelson, Noah	--	Old Spanish National Historic Trail	The project would also disrupt the Congressionally-designated Old Spanish National Historic Trail.	The Draft RMPA/EIS identifies that the Project and the action alternatives could all result in "substantial interference" with the nature, purpose, and primary uses of the OSNHT. Refer to Master Response 5: Old Spanish National Historic Trail for a summary of the impact analysis and mitigation.
C79-5	6/15/2019	Youngelson, Noah	--	BLM Management	Compounding the problems surrounding Arevia Power's plans to destroy desert wildlands is that the Department of Interior decided not to update its Resource Management Plan in southern Nevada. The result is a relative free-for-all on public lands: the Federal stewards of our public lands have not decided through a recent public process what we as a society want to protect or exploit. This gives developers of all varieties an advantage because "multiple use" is the default on most public lands that are not protected. Multiple use, however, is a misnomer because once a developer builds an open-pit mine, solar power project, or natural gas well pad on public lands, it severely limits the number of species that can benefit from that land. The loss of that land to a developer also means that we humans cannot enjoy that land for a vast number of other uses, including camping, hiking, wildlife watching, etc.	The review and update to the 1998 Las Vegas RMP is outside the scope of this RMPA/EIS. The 1998 Las Vegas RMP is the current approved RMP that the Project is assessed against. Renewable energy development was not specifically addressed in the 1998 Las Vegas RMP; however, in accordance with FLPMA, public lands are to be managed for multiple uses in a manner that accounts for a combination of balanced and diverse resources uses that consider the long-term needs of future generations for renewable and non-renewable resources (as is stated in the Final RMPA/EIS). The Draft RMPA/EIS on page 1-1 also stated that "The BLM is authorized to grant ROWs on public lands for systems of generation, transmission, and distribution of electrical energy (Section 501[a][4] and 43 CFR 2800). Taking into account the BLM's multiple-use mandate, the BLM's purpose and need for this action is to respond to the ROW application submitted by the Applicant under Title V of FLPMA (43 USC § 1761) (serial number N-84631) to construct, operate, maintain, and decommission the Project in compliance with FLPMA, BLM ROW regulations, the BLM NEPA Handbook, DOI NEPA regulations, and other applicable federal and state laws and policies." The 1998 Las Vegas RMP does not preclude development of renewable energy projects through the FLPMA ROW

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						process. Refer to the Draft RMPA/EIS for the analysis of impacts on and mitigation measures addressing other uses of the land including recreation.
C80-1	8/18/2019	Zana, C	--	Alternatives	I saw someone suggest covered parking as a way to place more solar panels. The Springs Preserve in Las Vegas did something similar. Is it possible to create solar parks? Taking existing city parks and using the solar panels as shade?	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative.
C80-2	8/18/2019	Zana, (last name not provided)	--	Alternatives	There are hospital and library parking lots that could benefit as well.	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative.
C80-3	8/18/2019	Zana, (last name not provided)	--	Threatened, Endangered, and Candidate Species	Desert tortoise and certain plants are projected to have devastating futures if the proposed area is used.	Refer to Master Response 2: Mojave Desert Tortoise that addresses the impacts on desert tortoise, the approach to the alternatives, the USFWS consultation to assess the impacts, and the impacts of the mowing alternatives. The master response also provides information regarding studies conducted to determine the effects of translocation of desert tortoise. The findings of several studies have reinforced that use of translocation of desert tortoise does not have deleterious effects. The mowing alternatives allow for tortoise to be returned to their home ranges to potentially reduce the effects solar development has traditionally had on the tortoise populations. The USFWS will issue a Biological Opinion that includes desert tortoise protection measures.
C81-1	6/17/2019	Name Withheld	--	Vegetation and Jurisdictional Waters	Flattening 7,100 acres for a large scale solar project would destroy plants and create dust, PM-10.	The Proposed Action would result in the greatest effects to plants and dust generation. As described in Section 2.2 of the Draft RMPA/EIS, two alternatives were identified for evaluation in this EIS, an All Mowing Alternative and a Hybrid Alternative. These alternatives include the use of mowing as a construction method for all or portions of the solar development area, which would allow for existing vegetation to remain at a height of 24 inches (61 centimeters) but not less than 18 inches (46 centimeters) where justified. Use of the mowing methods would minimize impacts related to fugitive dust, PM ₁₀ , and impacts to native vegetation. Additionally, MM VG-1 includes requirements of the Site Restoration Plan and Integrated Weed Management Plan, which would minimize impacts to vegetation and MM AQ-1 requires preparation of a Dust Control and Air Quality Plan which shall include fugitive dust and equipment controls to minimize emissions. Dust control requirements are described further in Master Response 8: Drainage Impacts and Hydrologic Changes, Erosion, and Dust.
C81-2	6/18/2019	Name Withheld	--	Wildlife, Migratory Birds, and Special Status Species	The reflected light also fries birds flying overhead.	The Project will utilize PV solar technology, not the concentrated solar power technology that was used for the ISEGS. Refer to Master Response 3: Bighorn Sheep and Migratory Birds for how impacts of birds from solar panels (and other components) are addressed. MM WILD-7 requires an avian monitoring plan that is specific to the facility. The plan is available with the Final RMPA/EIS.
C81-3	6/19/2019	Name Withheld	--	Water Resources	The metals used in solar panels are toxic, and will inevitably leech into the Colorado River and the water supply of Las Vegas.	The solar panels would be installed according to manufacturer's specifications and are not anticipated to break during construction, or operation and maintenance. Solar panels are designed to withstand extreme weather but if damaged, would be disposed of in accordance applicable solid waste regulations. To ensure that wastes would be disposed of in accordance with laws, MM Public Services (PS)-1 requires preparation and implementation of a Waste and Hazardous Materials Management Plan prior to operation to minimize potential effects. Following

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Comment Code	Date	Last Name, First Name	Affiliation	Comment Topic	Comment (Verbatim)	Response
						decommissioning of the solar facility, the solar panels would be removed from the Project site and properly disposed of. Water quality impacts to the drinking water supply of Las Vegas are not anticipated.
C81-4	6/20/2019	Name Withheld	--	Project Description	The water trucks required to be used during construction makes it easy for insects (fire ants) to move into the area during the construction phase and replace native insects.	Water trucks would be used during Project construction for dust suppression. As described on page 3-39 of the Draft RMPA/EIS, water would likely evaporate quickly from the application surface. The intent of water use for dust suppression is to spray a thin layer of water over bare ground to moisten soil and prevent dust from blowing, and not to create pooling. Because the sprayed water would not pool or stagnate, it would not attract non-native insects to the site. Approved dust palliatives could also be used as an alternative to water for dust suppression. During operation and maintenance, panel cleaning methods would use no water or in a way that water would not runoff the panel surfaces.
C81-5	6/21/2019	Name Withheld	--	Water Resources	Solar panels are flimsy and are easily cracked by hail, inevitably causing the toxic contents to contaminate the soil and any ground water underneath.	<p>The National Renewable Energy Laboratory (NREL) works with the U.S. Department of Energy's SunShot Initiative to improve the durability of solar modules. Included in the NREL testing is the requirement to survive hail stone impact. NREL assessed the damage to their 2.5-MW of PV power at their Golden, Colorado Campus following a hailstorm. The post-storm inspection revealed one broken panel. Solar panel technology has improved, and solar energy systems can withstand extreme weather (Gay 2017).</p> <p>As stated in Section 3.17: Public Health and Safety of the Draft RMPA/EIS, the consequences of a release of hazardous materials used at the solar facility would not cause a threat to the health and safety of the surrounding community due to the limited quantity and toxicity of the substances and the distance to the nearest receptors. Damage to solar panels is anticipated to be infrequent. Damaged solar panels would be disposed of in accordance with applicable solid waste regulations. To ensure that wastes would be disposed of in accordance with laws, MM PS-1 requires preparation and implementation of a Waste and Hazardous Materials Management Plan prior to operation to minimize potential effects.</p>
D1-1	7/23/2019	Emmerich, Kevin	Basin and Range Watch	Threatened, Endangered, and Candidate Species	This mowing alternative I think presents a lot of problems. I think it still has a lot of impacts, and I think they're not being addressed. This presentation that we saw here made it look pretty much like a win-win. I'm just pretty worried about something this large. You're basing it on a Pahrump solar project that's 80 acres over in Nye County where they found four tortoise and they did reenter the site, but on that site a lot of the mowed vegetation that's coming back is invasive, Schismus grass, brome grass, Erodium, Russian thistle, and that's not quite as nutritious. That's degrading the habitat quality for the animal.	Refer to Master Response 2: Mojave Desert Tortoise (under Scientific Study) for a discussion of the mowing methods proposed, acknowledging it is a new method and adverse effects, and the long-term monitoring that will be employed to understand it is success. The Draft RMPA/EIS analyzed the indirect effect on invasive plant species on desert tortoise habitat and foraging (refer to Section 3.8: Threatened, Endangered, and Candidate Species). Some revisions have been made to the analysis for clarity and understanding in the Final RMPA/EIS. Extensive measures are included in MM VG-1 to remove and treat Sahara mustard and other invasive weeds on the Project site. The mowing alternatives also reduces these impacts as native vegetation would be maintained on-site. Refer to Master Response 4: Threecorner Milkvetch, Other Sensitive Plants, and Native Vegetation Communities for information on spread of non-native species in mowed areas.
D1-2	7/23/2019	Emmerich, Kevin	Basin and Range Watch	Threatened, Endangered, and Candidate Species	As far as mowing the vegetation, you're still going to be using vehicles that weigh thousands of pounds, 10 to 15,000 pounds on -- I used to do tortoise biology, not very long, but I knew it is very hard to find hatching tortoises, juvenile tortoises. There's going to be mortality from that. And so moving the tortoises in itself has a problem.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction) for an explanation as to how and why neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Details on how clearance surveys are conducted and when are also

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						provided in the master response, which require 100 percent coverage of the site and would ensure that no desert tortoises remain within the Project site. As stated in Master Response 2: Mojave Desert Tortoise (under On-Going Operations and Maintenance), operations and maintenance work on solar facilities is minimal and would rarely involve heavy equipment.
D2-1	7/23/2019	Bundorf, Judy	--	Wildlife, Migratory Birds, and Special Status Species	The area that encompasses that proposed solar plant is called Hunting Area Number 268. There are more desert bighorn sheep tags issued in that area than anywhere else in the entire state of Nevada. My husband headed out there a few years ago. Where he harvested his ram was within sight of that smoke shop, so we know that they use that area. And in the spring, when there's green grass, they will all be down there where it used to be, but when that is built, who knows where the desert bighorn will go. Plus with the impact potentially on the desert bighorn, bombing, expanding the bombing range, the bighorns again will be an endangered species. This coming year, excuse me, in 2018 there were 95 desert bighorn tags issued for that immediate area.	Refer to Master Response 3: Bighorn Sheep and Migratory Birds for a discussion of why bighorn sheep would not be impacted by the Project. Bighorn sheep habitat is not found on site and this species does not regularly use the site.
D2-2	7/24/2019	Bundorf, Judy	--	Public Health and Safety	Number three, Valley Fever. I see from your report, in 2016 Clark County had 75 cases. In 2017, 142 cases. In 2018, who knows. But I do know from everything I've read, minority, especially Native Americans, are especially susceptible to this, as well as Hispanics and Pacific Islanders. This fungal infection can be deadly in someone who doesn't have a good immune system.	The commenter's concerns are noted. The Applicant will implement BMPs for dust control, including wetting down areas that will be graded to avoid dust becoming airborne. Refer to page 3-171 of the Draft RMPA/EIS for a discussion of impacts associated with valley fever, "MM AQ-1 requires the development and implementation of a Dust Control and Air Quality Plan, which would reduce fugitive dust and minimize the risk to workers of contracting valley fever." Dust generation during operation of the facility for the All Mowing and the Hybrid Alternatives would be less than baseline conditions, as shown on Table 3.9-6 on page 3-100 and Table 3.9-8 on page 3-102.
D3-1	7/23/2019	Carter, Max	IBEW 357	Recreation	And this area, ironically it was brought up about the solar zones, is probably less used than the dry lake bed on the other side of the highway. The dry lake bed is more intensively used for recreation than this area. This area gets moderate use, not a high impact use from off-road enthusiasts.	This comment is noted. Refer to Section 3.2: Recreation of the Draft RMPA/EIS for the analysis on recreation and OHV use., including a description of current OHV use of the Project area.
D4-1	7/24/2019	Harper, Christopher	AhaMakav Cultural Society and the Fort Mojave Indian Tribe	BLM Management	The project is not conforming to the current resource management plan, and as such should not be approved due to this nonconformity, and no amendment to the guidance document should occur.	The RMP amendment proposed as part of the Project would allow the Project to comply with the 1998 RMP. The VRM Class in the Project area would be changed from Class III to a Class IV to be compatible with the solar development and particularly the visibility of the proposed transmission structure. Refer to Master Response 6: Change to Visual Resource Management Class and Visual Impacts for more information on the change to the VRM class.
D5-1	7/24/2019	Jackson, Donald	Best in the Desert	Old Spanish National Historic Trail	And my comment to that is the Silver State Solar Project in Primm put fences on both sides of the route that goes through there to allow public access to still get into the mountains there, and so I would comment that they should look at that for the Spanish Trail as well to make sure the public can still use that route and not be closed off of the Spanish Trail.	The Draft RMPA/EIS states on page 3-145 that "recreational access within the OSNHT corridor in the Project area would be substantially restricted by Project construction and O&M...access to portions of Old Spanish Trail Road would be permanently severed, specifically through development areas D and E, resulting in adverse impacts on recreationalists utilizing Old Spanish Trail Road for access and travel opportunities." The comment is acknowledged and the Draft RMPA/EIS allows for a similar scenario. Designating some routes that are more easily traveled, such as within the California Wash or along the unrelated Old Spanish Trail Road, would allow for continued recreational use and an experience of the trail but it would not be a complete experience. Visual impacts from the solar facility are minimized through travel in the California Wash, due to topography, the traveler's inferior position in the wash, and wash vegetation.

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D5-2	7/25/2019	Jackson, Donald	Best in the Desert	Threatened, Endangered, and Candidate Species	Our company has been in business since 1983, and in the last seven years, off-road racing in general has not taken one tortoise. If we take one tortoise, they reevaluate and close our racing until they have a new proposal on how to mitigate it. So I think the taking of 220 tortoises is unacceptable until they can find a suitable route option to replace those to a correct habitat.	Refer to Master Response 2: Mojave Desert Tortoise (under Initial Mowing During Construction and On-Going Operations and Maintenance) for an explanation of the activities and associated impacts that would occur during construction, operations and maintenance, and how impacts to tortoise are minimized.
D5-3	7/26/2019	Jackson, Donald	Best in the Desert	Alternatives	Also on the mowing, a lot of people don't realize this machine goes in and mows down the bushes, but it is also going to crush the burrow, and so I don't think that's an alternative as well. I think that's just not acceptable because it is going to crush the bushes, and then when the tortoises come back to their habitat, their habitat will not be usable and you'll still have a high extinction rate.	Refer to Master Response 2: Mojave Desert Tortoise for a discussion of the proposed vegetation mowing and desert tortoise. Neither adult nor juvenile desert tortoise would be present during initial mowing and construction of the action alternatives, avoiding direct impacts. Refer to Master Response 2: Mojave Desert Tortoise for a description of the operations and maintenance under the mowing alternatives, and the protections afforded desert tortoise to minimize impacts, as described in the Draft RMPA/EIS and the Biological Assessment (included as an appendix to the Final RMPA/EIS).
D6-1	7/9/2019	Mowery, Lee	--	Alternatives	Very long Distance from Population Area would require INSTALLATION of HIGH VOLTAGE WIRES & TOWERS TO GET POWER BACK TO LAS VEGAS AREA	The Project site is in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length. New transmission from the Project site to Las Vegas is not needed.
D6-2	7/9/2019	Mowery, Lee	--	Wildlife, Migratory Birds, and Special Status Species	Very close to Fragile areas with HIGH PROBABILITY of Harm to the ENVIRONMENT ESPECIALLY DURING CONSTRUCTION in this area	The Draft RMPA/EIS analyzes the potential impacts to the environment resulting from Project construction. The Draft RMPA/EIS and Appendix H detail the mitigation measures that would be implemented to minimize impacts to the environment.
D6-3	7/9/2019	Mowery, Lee	--	Threatened, Endangered, and Candidate Species	Would require Large Study of What Endangered Animals would be effected.	The only federally listed animal that could occur in the Project area and be impacted is the desert tortoise. Surveys were conducted and data collected for desert tortoise and other wildlife species (refer to the ePlanning website for "Supporting Reports"). The reports on the ePlanning website include the <i>Desert Tortoise Survey Report (Areas A-E)</i> (Phoenix Biological Consulting 2018a); <i>Desert Tortoise Survey Report (Areas B1, B2, F&G)</i> (Phoenix Biological Consulting 2018b); and the <i>Golden Eagle (Aquila chrysaetos) Survey Report</i> (Dugan Biological Services, LLC and Phoenix Biological Consulting 2019). The Draft RMPA/EIS analyzed impacts on all present wildlife species in the Project area.
D6-4	7/9/2019	Mowery, Lee	--	Land Use	Extremely CLOSE to Designated WILDERNESS AREA	As stated on page 3-8 of the Draft RMPA/EIS "[s]even designated wilderness areas are within 25 miles (40 kilometers) of the Project site (refer to Figure 3.1-3)." The nearest of which is the Muddy Mountain Wilderness Area. Project construction would not impede access to the wilderness area. As discussed on page 3-109 of the Draft RMPA/EIS, the degree of visual contrast created by the Project as viewed from KOP 19 Colorock Quarry Road (at the border of the Muddy Mountains Wilderness Area) would be weak. No adverse effects on Wilderness Areas would occur.
D6-5	7/9/2019	Mowery, Lee	--	Project Description	Using About 7100 acres OUT OF A TOTAL LEASE COVERING 44,000 Acres ?????? That's only about 16% of the total area-WHAT ARE YOU GOING TO DO WITH THE OTHER 84 % ????????	The remainder of the ROW application area (approximately 36,900 acres [14,933 hectares]) would remain undeveloped, regardless of whether the Project gets approved, and would be managed by the BLM. The ROW grant, if approved, would only apply to the approximately 7,100-acre

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						(2,873-hectare) Project site or the minimum acreage needed to generate 690-MW with battery storage (per MM WILD-1 in Appendix H).
D6-6	7/9/2019	Mowery, Lee	--	Alternatives	May I Suggest you consider Building your PROJECT in LAS VEGAS & NORTH LAS VEGAS USING THE ROOF TOPS OF OVER 130 MILLION SQUARE FEET OF ROOF TOPS OF WAREHOUSES & INDUSTRIAL BUILDINGS -WHERE COST OF CONSTRUCTION WOULD BE LESS & NO PROBLEMS WITH ENVIRONMENT & PROTECTED DESERT ANIMALS. Also the current OWNERS would be MOST HAPPY TO GET MORE RENTAL INCOME FROM A LONG TERM LEASE TO USE THEIR ROOF TOP AREA	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative.
D6-7	7/9/2019	Mowery, Lee	--	Alternatives	Question: Why No combination with wind power or Geothermal?? Is this really the highest and best use of so much land??	Other types of renewable energy projects, including wind, geothermal, and other solar technologies, were rejected through the alternatives screening process from detailed consideration because they would not meet BLM's purpose and need to respond to the Applicant's application under Title V of the FLPMA for a ROW grant to construct, operate, maintain, and decommission a solar PV facility on public lands. Refer to the Alternatives Report, provided with the Draft RMPA/EIS, for additional discussions as to why other technologies were rejected. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.
D7-1	7/9/2019	Mowery, Lee	--	Alternatives	Very long Distance from Population Area would require INSTALLATION of HIGH VOLTAGE WIRES & TOWERS TO GET POWER BACK TO LAS VEGAS AREA	The Project site is in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length. New transmission from the Project site to Las Vegas is not needed.
D7-2	7/9/2019	Mowery, Lee	--	Wildlife, Migratory Birds, and Special Status Species	Very close to Fragile areas with HIGH PROBABILITY of Harm to the ENVIRONMENT ESPECIALLY DURING CONSTRUCTION in this area	The Draft RMPA/EIS analyzes the potential impacts to the environment resulting from Project construction. The Draft RMPA/EIS and Appendix H detail the mitigation measures that would be implemented to minimize impacts to the environment.
D7-3	7/9/2019	Mowery, Lee	--	Threatened, Endangered, and Candidate Species	Would require Large Study of What Endangered Animals would be effected.	The only federally listed animal that could occur in the Project area and be impacted is the desert tortoise. Surveys were conducted and data collected for desert tortoise and other wildlife species (refer to the ePlanning website for "Supporting Reports"). The reports on the ePlanning website include the <i>Desert Tortoise Survey Report (Areas A-E)</i> (Phoenix Biological Consulting 2018a); <i>Desert Tortoise Survey Report (Areas B1, B2, F&G)</i> (Phoenix Biological Consulting 2018b); and the <i>Golden Eagle (Aquila chrysaetos) Survey Report</i> (Dugan Biological Services, LLC and Phoenix Biological Consulting 2019). The Draft RMPA/EIS analyzed impacts on all present wildlife species in the Project area.
D7-4	7/9/2019	Mowery, Lee	--	Land Use	Extremely CLOSE to Designated WILDERNESS AREA	As stated on page 3-8 of the Draft RMPA/EIS "[s]even designated wilderness areas are within 25 miles (40 kilometers) of the Project site (refer to Figure 3.1-3)." The nearest of which is the Muddy Mountain Wilderness Area. Project construction would not impede access to the wilderness area. As discussed on page 3-109 of the Draft RMPA/EIS, the degree of visual contrast created by the Project as viewed from KOP 19 Colorock Quarry Road (at the border of the Muddy Mountains Wilderness Area) would be weak. No adverse effects on Wilderness Areas would occur.
D7-5	7/9/2019	Mowery, Lee	--	Project Description	Using About 7100 acres OUT OF A TOTAL LEASE COVERING 44,000 Acres ?????? That's only about 16% of the total area-WHAT ARE YOU GOING TO DO WITH THE OTHER 84 % ????????	The remainder of the ROW application area (approximately 36,900 acres [14,933 hectares]) would remain undeveloped, regardless of whether the Project gets approved, and would be managed by the BLM. The ROW

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Comment Code	Date	Last Name, First Name	Affiliation	Comment Topic	Comment (Verbatim)	Response
						grant, if approved, would only apply to the approximately 7,100-acre (2,873-hectare) Project site or the minimum acreage needed to generate 690-MW with battery storage (per MM WILD-1 in Appendix H).
D7-6	7/9/2019	Mowery, Lee	--	Alternatives	May I Suggest you consider Building your PROJECT in LAS VEGAS & NORTH LAS VEGAS USING THE ROOF TOPS OF OVER 130 MILLION SQUARE FEET OF ROOF TOPS OF WAREHOUSES & INDUSTRIAL BUILDINGS -WHERE COST OF CONSTRUCTION WOULD BE LESS & NO PROBLEMS WITH ENVIRONMENT & PROTECTED DESERT ANIMALS. Also the current OWNERS would be MOST HAPPY TO GET MORE RENTAL INCOME FROM A LONG TERM LEASE TO USE THEIR ROOF TOP AREA	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative.
D7-7	7/9/2019	Mowery, Lee	--	Alternatives	Question: Why No combination with wind power or Geothermal?? Is this really the highest and best use of so much land??	Other types of renewable energy projects, including wind, geothermal, and other solar technologies, were rejected through the alternatives screening process from detailed consideration because they would not meet BLM's purpose and need to respond to the Applicant's application under Title V of the FLPMA for a ROW grant to construct, operate, maintain, and decommission a solar PV facility on public lands. Refer to the Alternatives Report, provided with the Draft RMPA/EIS, for additional discussions as to why other technologies were rejected. Master Response 1: Alternatives provides additional information on the alternatives' evaluation process.
D8-1	7/9/2019	Mowery, Lee	--	Alternatives	Very long Distance from Population Area would require INSTALLATION of HIGH VOLTAGE WIRES & TOWERS TO GET POWER BACK TO LAS VEGAS AREA	The Project site is in close proximity to an existing transmission corridor with capacity on existing infrastructure to transmit the power to end-users. The gen-tie lines for the Project would be less than 5 miles (8 kilometers) in length. New transmission from the Project site to Las Vegas is not needed.
D8-2	7/9/2019	Mowery, Lee	--	Wildlife, Migratory Birds, and Special Status Species	Very close to Fragile areas with HIGH PROBABILITY of Harm to the ENVIRONMENT ESPECIALLY DURING CONSTRUCTION in this area	The Draft RMPA/EIS analyzes the potential impacts to the environment resulting from Project construction. The Draft RMPA/EIS and Appendix H detail the mitigation measures that would be implemented to minimize impacts to the environment.
D8-3	7/9/2019	Mowery, Lee	--	Threatened, Endangered, and Candidate Species	Would require Large Study of What Endangered Animals would be effected.	The only federally listed animal that could occur in the Project area and be impacted is the desert tortoise. Surveys were conducted and data collected for desert tortoise and other wildlife species (refer to the ePlanning website for "Supporting Reports"). The reports on the ePlanning website include the <i>Desert Tortoise Survey Report (Areas A-E)</i> (Phoenix Biological Consulting 2018a); <i>Desert Tortoise Survey Report (Areas B1, B2, F&G)</i> (Phoenix Biological Consulting 2018b); and the <i>Golden Eagle (Aquila chrysaetos) Survey Report</i> (Dugan Biological Services, LLC and Phoenix Biological Consulting 2019). The Draft RMPA/EIS analyzed impacts on all present wildlife species in the Project area.
D8-4	7/9/2019	Mowery, Lee	--	Land Use	Extremely CLOSE to Designated WILDERNESS AREA	As stated on page 3-8 of the Draft RMPA/EIS "[s]even designated wilderness areas are within 25 miles (40 kilometers) of the Project site (refer to Figure 3.1-3)." The nearest of which is the Muddy Mountain Wilderness Area. Project construction would not impede access to the wilderness area. As discussed on page 3-109 of the Draft RMPA/EIS, the degree of visual contrast created by the Project as viewed from KOP 19 Colorock Quarry Road (at the border of the Muddy Mountains Wilderness Area) would be weak. No adverse effects on Wilderness Areas would occur.
D8-5	7/9/2019	Mowery, Lee	--	Project Description	Using About 7100 acres OUT OF A TOTAL LEASE COVERING 44,000 Acres ?????? That's only about 16% of the total area-WHAT ARE YOU GOING TO DO WITH THE OTHER 84 % ????????	The remainder of the ROW application area (approximately 36,900 acres [14,933 hectares]) would remain undeveloped, regardless of whether the

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Comment Code	Date	Last Name, First Name	Affiliation	Comment Topic	Comment (Verbatim)	Response
						Project gets approved, and would be managed by the BLM. The ROW grant, if approved, would only apply to the approximately 7,100-acre (2,873-hectare) Project site or the minimum acreage needed to generate 690-MW with battery storage (per MM WILD-1 in Appendix H).
D8-6	7/9/2019	Mowery, Lee	--	Alternatives	May I Suggest you consider Building your PROJECT in LAS VEGAS & NORTH LAS VEGAS USING THE ROOF TOPS OF OVER 130 MILLION SQUARE FEET OF ROOF TOPS OF WAREHOUSES & INDUSTRIAL BUILDINGS -WHERE COST OF CONSTRUCTION WOULD BE LESS & NO PROBLEMS WITH ENVIRONMENT & PROTECTED DESERT ANIMALS. Also the current OWNERS would be MOST HAPPY TO GET MORE RENTAL INCOME FROM A LONG TERM LEASE TO USE THEIR ROOF TOP AREA	Refer to Master Response 1: Alternatives for information on why distributed generation was not considered as an alternative.

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4 Non-Substantive Comments

A high volume of non-substantive comments was received by the BLM. As previously stated, 341 of 461 comments (approximately 74 percent) were in favor of the Project. These comments were all non-substantive as those in favor of a Project typically do not present detailed critiques of the Draft RMPA/EIS.

The main topics presented in non-substantive comments are summarized as follows:

- Support the Project (with no reasoning).
- Oppose the Project (with no reasoning).
- The Project will provide jobs and is good for the economy.
- The Project will help Nevada meet renewable energy goals.
- The Project will not impact off-road recreationalists.
- The Project will harm desert tortoise (with no reasoning).
- Renewable energy is good for the environment and is important to combat the climate crisis.
- Solar energy is clean and uses no water, and Nevada has abundant sunshine.
- Tortoise relocation and reintroduction is the best alternative.
- Mowing is the best alternative.
- Based on experience working in the solar industry, energy will stay in Nevada.
- Support protecting environmental resources, noting that the mitigation measures will be sufficient.

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5 Text Edits to the Draft RMPA/ EIS in Preparing the Final RMPA/EIS

5.1 Overview

This chapter of the *Public Comment, Responses, and Revisions to the Draft RMPA/EIS* appended to the Final RMPA/EIS illustrates the revisions that have been made to the Draft RMPA/EIS text since the public release and in response to the comments received. The text and headers of the Draft RMPA/EIS have been consistently updated, where applicable, to indicate the document is the Final RMPA/EIS. The tables that were presented in the Draft RMPA/EIS have been removed and placed into a new appendix of the Final RMPA/EIS, Appendix K, in order to shorten the page length of the document. A summary of the public involvement, consultation, and coordination that was conducted has been added to the Executive Summary and Chapter 4: Consultations, Coordination, and Public Involvements of the Final RMPA/EIS.

The revisions presented in this chapter have been developed from either comments received or the BLM's internal review of the Draft RMPA/EIS. Gray shaded strikeouts indicate that text has been removed for the Final RMPA/EIS. Gray shaded underline indicates that text has been added or revised for the Final RMPA/EIS.

5.2 Revisions to Draft RMPA/EIS

Executive Summary

Page ES-1 is revised as follows:

This Final ~~Draft~~ Resource Management Plan Amendment (RMPA) and Environmental Impact Statement (EIS) has been prepared by the Department of the Interior (DOI), Bureau of Land Management (BLM).

Page ES-1 is revised as follows:

This Final ~~Draft~~ RMPA/EIS analyzes effects of and alternatives to the Gemini Solar Project (Project) described in the Plan of Development (POD) submitted by Solar Partners, XI, LLC (Applicant).

Page ES-1 is revised as follows:

In accordance with FLPMA, public lands are to be managed for multiple uses in a manner that accounts for a combination of balanced and diverse resources uses that consider the long-term needs of future generations for renewable and non-renewable resources.

Page ES-1 is revised as follows:

The BLM would ~~—~~ include ~~any~~ terms, conditions, and stipulations it determines to be in the public interest and may include modifying the proposed use or changing the location of the proposed facilities (43 Code of Federal Regulations [CFR] 2805.10(a)(1)).

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Page ES-2 is revised as follows:

The Proposed Action would be constructed using the typical method of construction for utility-scale solar development, referred to as "disk and roll" (i.e., traditional methods), which would remove all vegetation and compact the soils. The Project would result in the permanent disturbance of approximately 7,097 acres (2,873 hectares) within the 44,000-acre ROW application area.

Page ES-2 is revised as follows:

The Hybrid Alternative (BLM's Preferred Alternative) would involve mowing, which would maintain vegetation, across 65 percent of the solar array areas and developing the remaining 35 percent of the solar arrays using traditional methods ~~that would, largely, remove all native vegetation. The Proposed Action would be constructed using all traditional methods.~~

Page ES-2 is revised as follows:

Areas of controversy (40 CFR 1502.10) raised during scoping by the public and agencies that are relevant to the environmental analysis are detailed in Table Executive Summary (ES)-1 in Appendix K. Several other resource topics in addition to those listed in the table are analyzed in the EIS, including Geology, Soils, and Mineral Resources; Paleontological Resources; Acoustics; Native American Religious Concerns; and Transportation.

Page ES-2 is revised as follows:

Table ES-2 in Appendix K compares the anticipated effects of the Proposed Action and each alternative on the resources analyzed in this EIS. The No Action Alternative would have no effects to any of the environmental resources listed, as the Project would not be built. The No Action Alternative is not included in Table ES-2.

Page ES-2 is revised as follows:

~~The comment period closed on September 5, 2019.~~ Two additional public meetings were held on July 23, 2019 at the Suncoast Hotel and Casino and on July 24, 2019 at the Moapa Community Center during the 90-day public review period to provide an overview of the Project and analyses and to receive public comments. The comment period closed on September 5, 2019.

Table ES-2 on Page ES-4 is revised as follows:

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Table ES-2 Comparison of Effects Across the Proposed Action, the All Mowing Alternative, and the Hybrid Alternative

Potential Effect	Proposed Action	All Mowing Alternative	Hybrid Alternative
Land Uses (Section 3.1)			
Lands and realty (Figures 3.1-1 and 3.1-2)	The Proposed Action would cross I-15 and require an encroachment permit. A letter of concurrence with the Union Pacific railroad would be needed prior to issuance of the Notice to Proceed (NTP). The gen-tie lines would cross the 2,000-foot-wide Black Mountain – Crystal utility corridor and comply with transmission line separation guidelines. The gen-tie lines would cross existing and future transmission lines. A cooperative engineering agreement and appropriate approvals would need to be obtained prior to BLM’s issuance of an NTP. BLM will decide prior to the Final EIS in the ROD if construction of solar panels will be allowed through the Section 368 Energy Corridor of Concern (COC) in development area D.	Impacts would be similar to the Proposed Action, except the All Mowing Alternative would avoid adverse impacts associated with development in the Section 368 Energy COC.	Same as the Proposed Action.
Specially designated areas and lands with wilderness characteristics (Figure 3.1-3)	The Proposed Action would have an adverse visual impact on the Bitter Springs Back Country Byway (BSBCB) Specially Designated Area. The Proposed Action would have an adverse effect on the Old Spanish National Historic Trail (OSNHT) (refer to Old Spanish National Historic Trail [Section 3.13] in this table). Mitigation would be required to address adverse effects.	Similar to the Proposed Action.	Similar to the Proposed Action.
Rangeland resources	The Project area is not located within a grazing allotment. No adverse effects would occur.	Same as the Proposed Action.	Same as the Proposed Action.
Air space (Figure 3.1-4)	The Proposed Action would not conflict with military or civil airspace designations with implementation of mitigation. No adverse impacts from glint and glare or communication system interference would occur. Structures over 200 feet tall could interfere with airspace. An Obstruction Evaluation would be conducted by the Federal Aviation Administration (FAA) for any transmission facilities that are taller than 200 feet, which would need to be received by BLM prior to the ROD.	Same as the Proposed Action.	Same as the Proposed Action.
Recreation (Section 3.2)			
Change in access to existing recreation opportunities or areas (Figures 3.2-1 and 3.2-2)	Approximately 7,071 acres (2,862 hectares) of land open for recreational use would be removed for approximately 30 years (the duration of the ROW grant). The Proposed Action would sever direct access along Old Spanish Trail Road through development areas D and E, thus cutting off access between Old Spanish Trail Road and Valley of Fire Road and would cut off access on Route 167 through development area D, where it connects to the BSBCB and Valley of Fire Road. The Proposed Action would result in the loss of several OHV trails (including 39 miles [63 kilometers] of single- and two-track trails and 7 miles [11 kilometers] of existing unpaved roads). Impacts would be adverse.	Same as the Proposed Action, except access along Route 167 would be maintained through development area D. The All Mowing Alternative would result in the loss of several OHV trails (including 45.9 miles [73.9 kilometers] of single- and two-track trails and 7 miles [11 kilometers] of existing unpaved roads).	Same as the Proposed Action. The Hybrid Alternative would result in the loss of several OHV trails (including 39.4 miles [63.4 kilometers] of single- and two-track trails and 7 miles [11 kilometers] of existing unpaved roads).
Geology, Soils, and Minerals (Section 3.3)			
Seismic ground shaking and ground failure (Figure 3.3-4)	The Proposed Action would not substantially increase risk of seismic hazard exposure. There would be no risk of landslides or other destabilization.	Same as Proposed Action.	Same as Proposed Action.
Soil collapse	Potential for soil collapse and liquefaction in the Project area is low and not anticipated.	Same as Proposed Action.	Same as Proposed Action.
Increased erosion and loss of topsoil	The Proposed Action would involve approximately 7,071 acres (2,862 hectares) of surface disturbance and vegetation removal, which would increase the potential for soil erosion. Potential adverse effects would be reduced with implementation of the Stormwater Pollution Prevention Plan (SWPPP) ² during construction and through mitigation, including erosion stabilization, during operation. Grading for site preparation could result in loss of topsoil and would be reduced through Project best management practices (BMPs), including topsoil salvage.	The All Mowing Alternative would result in the least amount of erosion and loss of topsoil due to most of the development areas being left vegetated. This alternative includes the grading of 176 acres (71 hectares) for roads, equipment, and buildings. Potential adverse effects would be reduced with implementation of the SWPPP during construction and through mitigation, including erosion stabilization, during operation.	The Hybrid Alternative has less potential for direct and indirect effects due to 65 percent (4,460 4,489 acres [1,805 1,816 hectares]) of the development area being left vegetated, as compared with the Proposed Action. This alternative includes the construction of 2,578 2,549 acres (1,043 1,032 hectares) using traditional methods and grading as compared with 7,071 acres (2,862 hectares) for the Proposed Action. Potential adverse effects would be reduced with implementation of the SWPPP during construction and through mitigation, including erosion stabilization, during operation.

² Under the USEPA’s National Pollutant Discharge Elimination System stormwater permitting program, an SWPPP is required for discharges from construction activities that disturb one or more acres.

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Potential Effect	Proposed Action	All Mowing Alternative	Hybrid Alternative
Loss of minerals	No active mining claims, active oil and gas wells, or geothermal leases or operations are present on the Project site. No adverse effects on availability of mineral resources or mineral extraction would occur.	Same as the Proposed Action.	Same as the Proposed Action.
Paleontological Resources (Section 3.4)			
Loss of paleontological resources (Figures 3.4-1 and 3.4-2)	The Proposed Action would involve ground disturbance within areas of moderately paleontologically sensitive older alluvium. One known paleontological resource would be collected in accordance with mitigation. Previously undiscovered paleontological resources could be affected in areas of disk and roll and grading that would disturb the ground surface. Mitigation would be required to address adverse effects.	The All Mowing Alternative would have the fewest direct and indirect effects on paleontological resources because existing soils would be largely undisturbed. This alternative includes the grading of 176 acres (71 hectares) for roads, equipment, and buildings, where previously undiscovered paleontological resources could be found. Mitigation would be required to address adverse effects.	The Hybrid Alternative would have less impacts on soils over the 65 percent of the site that is mowed, resulting in fewer impacts on paleontological resources as compared with the Proposed Action. Previously undiscovered paleontological resources could be impacted in areas of disk and roll and grading that would disturb the ground surface. Mitigation would be required to address adverse effects.
Water Resources (Section 3.5)			
Increase in flooding and sedimentation (Figures 3.5-3 through 3.5-5)	The Proposed Action would involve approximately 7,071 acres (2,862 hectares) of surface disturbance through traditional construction methods, which could increase erosion and downstream sedimentation and deposition of fine-grained sediments during construction and operation. Implementation of the SWPPP BMPs and other mitigation would reduce the impact.	The All Mowing Alternative would result in much less surface disturbance that could increase sedimentation and runoff. Flows could still increase from clearing of roads, but impacts would be less as compared to the Proposed Action. Implementation of the SWPPP BMPs and other mitigation would minimize the impact.	The Hybrid Alternative would permanently remove <u>2,578 2,549</u> acres (1,043 1,032 hectares) of previously undisturbed native vegetation and involve mowing of 65 percent of the Project site (4,460 <u>4,489</u> acres [1,805 <u>1,816</u> hectares])). Flows could still increase from clearing of roads and in areas of traditional development on 35 percent of the site, but impacts would be less than with the Proposed Action. Implementation of the SWPPP BMPs and other mitigation would minimize the impact.
Potential contamination of surface water	Accidental release of oil, fuel, or other chemicals from mobile sources during construction may occur. Implementation of BMPs in compliance with the SWPPP and mitigation would reduce the impacts.	Same as the Proposed Action.	Same as the Proposed Action.
Changes to groundwater quality and quantity	The Proposed Action would have no impacts on groundwater quality. If the option to develop an on-site groundwater well is exercised, groundwater pumping would not have direct impacts on surrounding water users. Cumulative impacts on groundwater users and surface manifestations of groundwater would be minimized or avoided through the water appropriation review process.	Same as the Proposed Action.	Same as the Proposed Action.
Vegetation and Jurisdictional Waters (Section 3.6)			
Native vegetation communities (Figure 3.6-11)	Approximately 7,071 acres (2,862 hectares) of previously undisturbed native vegetation would be permanently removed by the Proposed Action.	Native vegetation would remain on site except in areas developed for utilities, buildings, and along roads (over approximately 176 acres [71 hectares]), resulting in the fewest impacts to native vegetation of the alternatives. Vegetation would still be altered through drive and crush and mowing.	The Hybrid Alternative would permanently remove <u>2,578 2,549</u> acres (1,043 1,032 hectares) of previously undisturbed native vegetation. Using mowing on 65 percent of the Project site (4,460 <u>4,489</u> acres [1,805 <u>1,816</u> hectares])) would result in fewer impacts on native vegetation as compared with the Proposed Action. Vegetation would still be altered through drive and crush and mowing.
Impacts on special status plant species (Figures 3.6-17 and 3.6-19)	The Proposed Action would directly impact known occurrences of threecorner milkvetch in development areas C and D and suitable habitat for threecorner milkvetch and Nye milkvetch in development areas C, D, and E. The permanent loss of 718 700 acres (<u>283 hectares</u>) of habitat would be an adverse effect and would conflict with the BLM’s commitments under the Multi-Species Habitat Conservation Plan (MSHCP). Indirect impacts would occur through spread of invasive species. Implementation of invasive species controls and other mitigation, including use of only drive and crush to construct in threecorner milkvetch habitat, would reduce but not eliminate impacts.	Adverse impacts on suitable threecorner milkvetch habitat would be similar to the Proposed Action. Indirect impacts could occur through spread of invasive species, although the likelihood of spread would be reduced because native vegetation would remain in mowed areas. Mowing would reduce impacts to soils that contain seed banks for special status plant species (<u>threecorner and</u> Nye milkvetch).	Adverse impacts to threecorner milkvetch habitat would be similar to the Proposed Action, with reduced potential for spread of invasive species in mowed areas where native vegetation remains. Traditional development areas correspond to threecorner milkvetch habitat. Mitigation includes construction using drive and crush instead of disk and roll in order to potentially preserve some seed bank for threecorner milkvetch. Mowing would reduce impacts to soils that contain seed banks for special status plant species (<u>threecorner and</u> Nye milkvetch).
Spread of invasive non-native species (Figures 3.6-1 through 3.6-3, and 3.6-12 through 3.6-16)	Vegetation removal and use of construction equipment would facilitate spread of invasive weeds. The Site Restoration Plan and Weed Management Plan would treat against invasive species, but weeds may persist and have an adverse effect on habitat and wildlife.	The spread of invasive species would also be an impact of the All Mowing Alternative. The spread of invasive species, however, would be less than with the Proposed	The spread of invasive species would also be an impact of the Hybrid Alternative, particularly in the 35 percent of the development areas that would be constructed using

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		Action. Weed treatment and herbicide use would therefore likely be less. Mowing all solar development areas would reduce soil impacts and would result in the maintenance of the most native vegetation of the alternatives. A Site Restoration Plan and Weed Management Plan would be required, similar to the Proposed Action.	traditional development methods. The spread of invasive species would be less than with the Proposed Action over 65 percent of the development areas that are mowed. Mowing would reduce soil impacts and would allow native vegetation to remain on site. Weed treatment and herbicide use would be similar to the Proposed Action for 35 percent of the site and similar to the All Mowing Alternative for 65 percent of the site. A Site Restoration Plan and Weed Management Plan would be required, similar to the Proposed Action.
Cacti/Yucca (Figures 3.6-4 through 3.6-8)	Construction activities would directly affect approximately 121,300 cacti and yucca individuals on the Project site. The Site Restoration Plan and mitigation would result in salvage of 2.1 percent of cacti and yucca. Most of the cacti and yucca would be permanently removed and destroyed, resulting in an adverse effect.	Cacti and yucca would remain on site except in utility areas and along roads, resulting in the fewest impacts. Yucca that would not survive trimming would be salvaged in accordance with the Site Restoration Plan and mitigation.	The Hybrid Alternative would reduce the number of cacti and yucca impacted to 56,957 individuals by using mowing on 65 percent of the Project site, resulting in less impacts than the Proposed Action. Cacti would be trimmed, but yucca that would not survive trimming would be salvaged in accordance with the Site Restoration Plan and mitigation.
Biocrust/Desert Pavement (Figures 3.6-9 and 3.6-10)	Approximately 414 acres (168 hectares) of biocrust and 524 acres (212 hectares) of desert pavement would be affected by grading and disk and roll. The loss of biocrust and desert pavement could increase weed infestations and dust. No mitigation is available to reduce effects, which would be adverse.	Biocrust and desert pavement would remain on site except in utility areas and along roads, resulting in the least impacts.	The Hybrid Alternative would reduce the acreage of effects to approximately 117 acres (47 hectares) of biocrust and 142 acres (57 hectares) of desert pavement by using mowing on 65 percent of the Project site, resulting in less impacts than the Proposed Action. The loss of biocrust and desert pavement would remain adverse.
Impacts on ephemeral drainages and waters of the United States (Figure 3.6-20)	Approximately 62 acres (25 hectares) of potentially jurisdictional ephemeral dry washes or channels would be indirectly or directly affected during construction and operation of the Project. Mitigation requiring avoidance of jurisdictional drainages, including a 27-acre (11-hectare) area in development area E, maintenance of predevelopment hydraulic conditions, implementation of BMPs, and compliance with United States Army Corps of Engineers (USACE) Section 404 would reduce effects. Fill quantities would likely be around 10 acres.	Permanent impacts would be limited to impacts on drainages from construction of access road crossings, utility trench crossings, and solar panel posts. Mitigation requiring avoidance of jurisdictional drainages, including a 27-acre (11-hectare) area in development area E, maintenance of predevelopment hydraulic conditions, implementation of BMPs, and compliance with USACE Section 404 would reduce effects. Approximately 1 acre (0.4 hectare) of potentially jurisdictional ephemeral dry washes or channels would be filled.	Permanent impacts would be limited to impacts on drainages from construction of access road crossings, utility trench crossings, and piers. Mitigation requiring avoidance of jurisdictional drainages, including a 27-acre (11-hectare) area in development area E, maintenance of predevelopment hydraulic conditions, implementation of BMPs, and compliance with USACE Section 404 would reduce effects. Approximately 1 acre (0.4 hectare) of potentially jurisdictional ephemeral dry washes or channels would be filled.
Wildlife, Migratory Birds, and Special Status Species (Section 3.7)			
Loss of habitat (Figure 3.6-11)	The Proposed Action would permanently remove approximately 7,071 acres (2,862 hectares) of suitable habitat for wildlife species.	The All Mowing Alternative would result in the removal of habitat on approximately 176 acres (71 hectares), which is less than the Proposed Action.	The Hybrid Alternative would result in the removal of approximately 2,578 2,549 acres (1,043 1,032 hectares) of habitat, which is less than the Proposed Action.
Migratory birds (Figures 3.7-1 through 3.7-3)	The Proposed Action could result in bird collisions with construction equipment and Project components. Implementation of Avian Power Line Interaction Committee (APLIC) measures and the Bird and Bat Conservation Strategy (BBCS) would reduce impacts.	Same as the Proposed Action.	Same as the Proposed Action.
Threatened, Endangered, and Candidate Species (Section 3.8)			
Impacts on special status species (Figure 3.8-1)	The Proposed Action would result in the loss of approximately 7,071 acres (2,862 hectares) of desert tortoise habitat from the Project site. Approximately 215 adult desert tortoises would be displaced. No long-distance translocation areas are available for successful translocation of these tortoises in the greater Northern Mojave Recovery Unit. The Proposed Action would result in take <u>result in the loss (mortality take)</u> of these tortoises, which would be a substantial adverse effect on the species and the local population. Several mitigation measures are proposed to reduce effects to desert tortoise during construction and operation of the gen-tie lines. Indirect effects would also be adverse, including loss of connectivity.	The All Mowing Alternative would result in a small loss of vegetation (approximately 176 acres [71 hectares]); however, all desert tortoise habitat would be substantially modified. This alternative allows desert tortoise the opportunity to reoccupy all development areas after construction. Approximately 220 adult desert tortoises (and an unknown number of juveniles) would be allowed to reoccupy the Project site or translocated a short distance	The Hybrid Alternative would remove less vegetation (approximately 2,578 2,549 acres [1,043 1,032 hectares])) as compared with the Proposed Action; however, all desert tortoise habitat would be substantially modified. This alternative allows desert tortoise the opportunity to reoccupy 65 percent of the development areas after construction. Approximately 183 adult desert tortoises (and an unknown number of juveniles) would be allowed to reoccupy the site

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		away, and 34 adults desert tortoises (and an unknown number of juveniles) would be moved to an area south of development areas B and D. Several mitigation measures would reduce effects to desert tortoises during construction and operation of the solar facility. Indirect effects to connectivity would be reduced as compared with the Proposed Action since tortoise could travel through the solar facility.	or would be moved within the Project area, and 36 desert tortoises (and an unknown number of juveniles) would be moved to an area south of development areas B and D. Several mitigation measures would reduce effects to desert tortoise during construction and operation of the solar facility. Indirect effects to connectivity would be less than with the Proposed Action because tortoises could travel through 65 percent of the solar facility. Fencing around areas of traditional development would have some effects on habitat connectivity.
Air Quality and Climate Change (Section 3.9)			
Impacts on air quality from dust and vehicle emissions	The Proposed Action would involve approximately 7,097 acres (2,872 hectares) of ground-disturbance on the Project site and along the gen-tie lines and use of construction vehicles that would result in fugitive dust and vehicle emissions during construction and decommissioning. Mitigation would minimize effects, but concentrations of nitrous oxides and particulate matter greater than 10 micrometers in diameter would still exceed standards. Dust generation during O&M would not exceed standards with controls in place.	The All Mowing Alternative would involve mowing all development areas, which would reduce fugitive dust generation. Construction emissions of criteria pollutants and ambient pollutant concentrations would be similar to or would increase under the All Mowing Alternative, based on a greater duration of equipment use or a greater number of equipment pieces needed for construction. Dust generation during O&M would be reduced because vegetation would be left in the solar development areas.	Hybrid Alternative would involve mowing of a portion of the Project site, thus minimizing ground disturbance from disk and roll as well as grading to 2,603 <u>2,574</u> acres (1,042 <u>1,053</u> hectares). Less fugitive dust would be generated than with the Proposed Action. Construction emissions of criteria pollutants and ambient pollutant concentrations would increase for the Hybrid Alternative, based on a greater duration of equipment use or a greater number of equipment pieces needed for construction. Dust generation during O&M would be reduced as compared with the Proposed Action.
Visual Resources (Section 3.10)			
Contrasting visual elements (Figures 3.10-20 through 3.10-58)	Project features would be visible from Key Observation Points (KOPs). The Proposed Action is within Visual Resource Management (VRM) Class III area and would require an amendment to the 1998 Las Vegas RMP to Class IV objective. The VRM Class IV objective allows for management activities that require major modifications of the existing landscape character, such as the transmission facilities associated with the Project.	Maintaining the vegetation under the solar arrays (6,939 acres [2,808 hectares]) would reduce some contrast, but the most adverse impacts would occur from the transmission facilities, which would be the same as with the Proposed Action.	Impacts would be the same as with the Proposed Action. Maintaining the vegetation under 65 percent of the solar arrays (4,460 <u>4,489</u> acres [1,805 <u>1,816</u> hectares]) would reduce some contrast, but the most adverse impacts would occur from the transmission facilities, which would be the same as with the Proposed Action.
Acoustics (Section 3.11)			
Impacts on noise levels	Noise associated with construction, operation, and decommissioning would be negligible due the distance of the Project to sensitive residential receptors.	Same as the Proposed Action.	Same as the Proposed Action.
Cultural Resources (Section 3.12)			
Disturbance to archaeological or historic sites, including traditional cultural properties	Two National Register of Historic Places (NRHP)-eligible cultural sites, in development areas A and C, have the potential to be adversely affected by the Proposed Action. An NRHP-eligible contributing segment of the Old Spanish Trail is located in development area B and would be removed as a result of Project development. Previously undiscovered cultural resources could be impacted in areas of disk and roll and grading that would disturb the ground surface. Mitigation would reduce but not eliminate adverse effects.	The All Mowing Alternative could adversely affect three NRHP-eligible resources located in development areas A, B2, and C and the NRHP-eligible contributing segment of the Old Spanish Trail in development area B. The All Mowing Alternative would have the least potential for impacts on previously undiscovered cultural resources because most of the development areas would be left vegetated (and, thus, relatively undisturbed). This alternative includes the disturbance of 176 acres (71 hectares) for grading for roads and equipment areas in the Project site. Mitigation would reduce but not eliminate adverse effects.	The Hybrid Alternative could adversely affect two NRHP-eligible resources located in development areas A and C and the NRHP-eligible contributing segment of the Old Spanish Trail in development area B. The Hybrid Alternative would permanently remove 2,578 <u>2,549</u> acres (1,043 <u>1,032</u> hectares) of previously undisturbed native vegetation from the Project site by disk and roll as well as grading. Mowing on 65 percent of the Project site (4,460 <u>4,489</u> acres [1,805 <u>1,816</u> hectares]) would result in less impacts on previously undiscovered cultural resources than with the Proposed Action. Mitigation would reduce but not eliminate adverse effects.
Native American <u>Religious</u> Concerns (Section 3.13)			
Loss of culturally important plants and wildlife habitat	The Proposed Action would result in the loss of culturally important plants, but none would be lost that are rare medical or food source plants that cannot be found in the surrounding areas.	Native vegetation would remain on site except in utility areas and along roads, resulting in the least impacts of the action alternatives.	The Hybrid Alternative would permanently remove 2,578 <u>2,549</u> acres (1,043 <u>1,032</u> hectares) of previously undisturbed native vegetation from the Project site by disk

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			and roll as well as grading. Mowing on 65 percent of the Project site (4,460 <u>4,489</u> acres [1,805 <u>1,816</u> hectares]) would reduce the loss of culturally important plants as compared with the Proposed Action.
Old Spanish National Historic Trail (Section 3.14)			
Impacts on Old Spanish National Historic Trail (Figures 3.14-1 through 3.14-3)	Development of the Project would result in modern, built features across a large portion of the valley in which the OSNHT occurs. The development of the solar facility would have adverse effects on the natural and cultural setting of the valley due to the degree of modern change that it introduces as well as impacts to recreation and public access, which would be considered a substantial interference with and a substantial interference with the nature, purpose, and primary uses of the trail. Commensurate mitigation (BLM MS-6280) and cultural resources laws and policies requires developing a Memorandum of Agreement (MOA) with the National Park Service Trail Administration Office, in consultation with the BLM Old Spanish Trail Administrator (OSTA <u>Co-Administrators</u>) to define additional measures to minimize effects to the OSNHT and its nature and purposes and primary uses.	Impacts would be similar to the Proposed Action for the 30 years of the ROW grant. The All Mowing Alternative includes minimizing disturbance and maintaining the native vegetation, soils, hydrology, and fauna in the solar array areas, which protects some of the important aspects of the setting of the trail, such that the trail’s purpose, need and primary uses could be restored shortly after decommissioning, removing any substantial interference with the nature, purpose, and primary uses of the trail.	Impacts would be a combination of those described for the Proposed Action and the All Mowing Alternative. Mitigation requires that drive and crush methods to preserve soils, vegetation root structures, and hydrology be used <u>in portions of development areas D and E</u> instead of disk and roll in traditional development areas (35 percent of the site) <u>and requires restoration in traditional development areas immediately following construction, which could support a similar restoration to restore the trail after decommissioning as the All Mowing Alternative. Similar to the Proposed Action, and thus, removal of the</u> substantial interference with the nature, purpose, and primary uses of the trail <u>could remain for the portions of the Project site developed with traditional methods.</u>
Socioeconomics and Environmental Justice (Section 3.15)			
Employment	The Proposed Action workforce is expected to average 500 to 700 workers (with a maximum of 900) during construction and 19 workers during operation. The workforce is anticipated to be sourced from the labor pool within Clark County. The increased opportunity of employment would be considered beneficial to the local community.	Similar to the Proposed Action, but a larger workforce may be needed to construct the entire solar field with mowing. Greater job opportunities and benefits could result.	Similar to the Proposed Action but a larger workforce may be needed to construct 65 percent of the solar field with mowing. Greater job opportunities and benefits could result.
Economics	The employment associated with construction and operation of the Proposed Action would have beneficial effects beyond just labor income, and effects on the regional economy as a result of constructing the Proposed Action would be beneficial.	The larger workforce size, if needed, would result in a <u>marginally</u> greater economic benefit to the regional economy than the Proposed Action.	Similar to the All Mowing Alternative.
Housing	Vacancy rates of 10 percent (38,583 units) and availability of temporary accommodations would accommodate the potential influx of workers during construction. Effects on the housing market from O&M workers would be negligible.	Similar to the Proposed Action.	Similar to the Proposed Action.
Public services	The Proposed Action and influx of workers during construction would minimally affect public services. Additional public services would not be required due to construction or operation.	Similar to the Proposed Action.	Similar to the Proposed Action.
Disproportionate effects on minority or low-income populations (Figure 2-1)	The Proposed Action would not result in a disproportionate effect on the minority population and low-income population of Native Americans on the Moapa River Indian Reservation. The employment associated with construction of the Proposed Action would have beneficial effects. Adverse health or cultural impacts are not anticipated.	Similar to the Proposed Action.	Similar to the Proposed Action.
Travel and Transportation Management (Section 3.16)			
Roadway operations (Figure 3.16-1)	Under the Proposed Action during peak construction activity, roadways and freeways used to support the Project would operate at a volume lower than the LOS C capacity. Implementation of a Traffic and Transportation Plan would minimize impacts related to roadway operations and traffic hazards.	Similar to Proposed Action.	Similar to the Proposed Action.
Public Health and Safety (Section 3.17)			
Occupational Health and Safety	Adverse effects on workers could occur during construction as well as O&M; any adverse effects would be minimized through safety standards, protective equipment, and mitigation.	Same as the Proposed Action.	Same as the Proposed Action.
Electric and Magnetic Fields (EMF)	The closest residences are approximately 13 miles (21 kilometers) north of the Project site. No residences or other uses would be subject to EMF exposure from the proposed transmission interconnection line.	Same as the Proposed Action.	Same as the Proposed Action.

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Environmental Site Contamination	No known spills or uncontrolled releases of hazardous materials or wastes, or other issues associated with chemicals, were identified for the Project area. Mitigation would minimize the potential exposure of workers to existing unknown hazardous materials.	Same as the Proposed Action.	Same as the Proposed Action.
Risk of Hazardous Materials Accidents or Spills	Accidental spills of chemicals and fuels could occur during construction or operation and would be handled in accordance with the Spill Prevention, Control, and Countermeasure (SPCC) plan. Implementation of the SWPPP, mitigation measures, and compliance with regulations would minimize risk of hazards associated with accidents and spills.	Same as the Proposed Action.	Same as the Proposed Action.
Solid waste management	Solid waste generated during construction, operation, and decommissioning would not exceed the capacity of local landfills. Batteries and hazardous wastes would be disposed of in accordance with a Waste Management Plan.	Same as the Proposed Action.	Same as the Proposed Action.
Emergency response interferences	Construction could require short-term closure of I-15 during installation of the gen-tie lines. With proper coordination with the Nevada Department of Transportation (NDOT) and implementation of encroachment permit requirements, adverse effects would not occur. An Emergency Response Plan <u>Emergency Action Plan</u> would be prepared to address worker evacuation in an emergency.	Same as the Proposed Action.	Same as the Proposed Action.
Public health	The Proposed Action would not increase risks of bringing West Nile Virus and Zika to the area. Implementation of mitigation measures to control fugitive dust would minimize the risk to workers of contracting valley fever.	Same as the Proposed Action. Herbicide use that can have impacts on applicator and worker safety would be reduced.	Same as the Proposed Action. Herbicide use that can have impacts on applicator and worker safety would be reduced by 65 percent as compared with the Proposed Action.
Intentionally destructive acts	The risk to workers or the public from intentionally destructive acts is low. Public access would be controlled by security and fencing.	Same as the Proposed Action.	Same as the Proposed Action.
Fire risk	The Project area is within a low-risk area for fires, and implementation of a Fire Prevention and Safety Plan would further minimize adverse effects related to fires. Fire risks would be lowest for this action because no vegetation that could ignite and spread fires would remain after site development. If weeds spread to surrounding areas or are contained and removed on site, fire risks could increase. An Integrated Weed Management Plan and Site Restoration Plan would address weeds, although weed spread could still occur, given the amount of exposed soil.	Fire risks would be similar to existing conditions, which is low risk for fire. Weed spread would be reduced under this alternative because more native vegetation would remain in place. An Integrated Weed Management Plan and Site Restoration Plan would address weeds.	Fire risks in traditional development areas (35 percent of the site) would be similar to the Proposed Action, and the fire risks in mowed areas (65 percent of the site) would be similar to the All Mowing Alternative. An Integrated Weed Management Plan and Site Restoration Plan would address weeds.

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Chapter 1 Introduction

Page 1-1 is revised as follows:

This ~~Draft-Final~~ RMPA and EIS has been prepared by the DOI, BLM. The BLM is the Lead Agency under the ~~FLMPA-FLPMA~~ of 1976 and NEPA.

Page 1-1 is revised as follows:

In accordance with FLPMA, public lands are to be managed for multiple uses in a manner that accounts for a combination of balanced and diverse resources uses that consider the long-term needs of future generations for renewable and non-renewable resources.

Page 1-1 is revised as follows:

The BLM would ~~may~~ include ~~any~~ terms, conditions, and stipulations it determines to be in the public interest and may include modifying the proposed use or changing the location of the proposed facilities (43 Code of Federal Regulations [CFR] 2805.10(a)(1)).

Page 1-1 is revised as follows:

The purpose and need for each of these agencies is to respond to authorization requests for permits and approvals to construct and operate the Project, as listed below in Table 1.6-1 under Section 1.6: Relationships to Other Policies, Plans, and Programs. All tables referenced in this chapter are presented in Appendix K.

Page 1-2 is revised as follows:

Several other resource topics in addition to those listed in the table are analyzed in the EIS, including Geology, Soils, and Mineral Resources; Paleontological Resources; Acoustics; Native American Religious Concerns; and Transportation.

Pages 1-4 and 1-5 are revised as follows:

Table 1.6-1 Federal, State, and Local Permits and Authorizations

Federal Permits, Authorizations or Inter-Agency Consultations
<i>DOI, BLM</i> <ul style="list-style-type: none">• ROW grant under Title V of FLPMA• EIS and Record of Decision to support issuance of ROW grant• RMPA• Contract for the Sale of Mineral Materials and free-use-permit (if needed)• Concurrence letter from Union Pacific Railroad
<i>DOI, BLM and State Historic Preservation Office/Advisory Council on Historic Preservation</i> <ul style="list-style-type: none">• BLM/State Historic Preservation Office, National Historic Preservation Act Section 106 Consultation• 18 USC Section 841-848; 27 CFR 181

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DOI, Fish and Wildlife Service

- Endangered Species Act, Section 7 Consultation and Biological Opinion/Incidental Take Statement
- 16 USC 1531 et seq. Biological Opinion and Take Authorization

DOI, National Parks Service

- Participant in the review of impacts on the Congressionally designated Old Spanish Trail

United States Army Corps of Engineers

- Permit for the discharge of dredged and/or fill material into waters of the United States under Section 404 of the Clean Water Act

United States Department of Defense, Nellis Air Force Base

- Review of Project for conflicts with military uses

United States Federal Aviation Administration

- Notice of Proposed Construction or Alteration and Obstruction Evaluation

State of Nevada Permits or Authorizations

Nevada State Historic Preservation Office

- BLM/State Historic Preservation Office, National Historic Preservation Act Section 106 Consultation

Nevada Department of Wildlife

- Implementation of terms and conditions of the Biological Opinion
- Fund for the Recovery of Costs
- Scientific Collection Permit (for subcontractor)

Nevada Division of Environmental Protection (NDEP)

- Prevention of Significant Deterioration Program, Major Source Permit
- Operating Permit to Construct
- General Stormwater Permit for Construction Activities (NOI and General Permit)
- Surface Area Disturbance/Dust Mitigation Control Plan
- Section 401 of the Clean Water Act Water Quality Certification
- General Stormwater Discharge Permit
- Groundwater Well Approval
- Pesticide General Permit
- Working in Waters Permit
- Wastewater Discharge Permits
- Holding Tank Permits

Nevada Division of Forestry

- Native Cacti and Yucca Commercial Salvaging and Transportation Permit
- State List Endangered Species Take Permit

Nevada Public Utilities Commission

- Nevada Utility Environmental Protection Act Permit

Nevada Department of Motor Vehicles and Public Safety

- Nevada State Hazardous Materials Permit or Roving Permit

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<i>Nevada Department of Transportation</i> <ul style="list-style-type: none">• ROW Occupancy Permit for facilities, such as transmission lines crossing state highways
Clark County Permits
<i>Clark County Department of Air Quality</i> <ul style="list-style-type: none">• Dust Control Permit• <u>Minor Source Permit (for generators)</u>• <u>Authority to Construct Permit (for generators)</u>
<i>Clark County Regional Flood Control District</i> <ul style="list-style-type: none">• Drainage Study Review
<u>Clark County Department of Public Works</u> <ul style="list-style-type: none">• <u>Encroachment Permit</u>
<i>Clark County Department of Comprehensive Planning</i> <ul style="list-style-type: none">• Special Use Permit
<i>Clark County Building Department</i> <ul style="list-style-type: none">• Grading Permit• Building Permit

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Chapter 2 Proposed Action and Alternatives

Page 2-1 is revised as follows

Figure 2-3 shows the development areas within the Project application area and the Project elements that comprise the Proposed Action. All figures referenced in this chapter are presented in Appendix D. All tables referenced in this chapter are presented in Appendix K.

Page 2-2 is revised as follows

The Project, as defined for the Proposed Action and the alternatives, would include the following elements. The precise locations of these elements may be revised through final engineering:

Page 2-3 is revised as follows

Infrastructure and Ancillary Systems

- A roadway system that would vary for the Proposed Action and alternatives (Figure 2-12 includes a cross section of a typical road);
- Access roads along Project generation-tie (gen-tie) lines, constructed in accordance for use by NV Energy to be a minimum 20 feet (6.1 meters) wide with an all-weather (aggregate) surface;
- A 2-acre (0.8 hectare) O&M area that would accommodate an O&M building, warehouse, parking area, and other associated facilities such as aboveground water storage tanks and delivery pipelines, septic system, security fencing, signage, lighting, and potentially a flagpole, and a driveway for site access off of Valley of Fire Road near the O&M building and off Valley of Fire Road to access development areas D and E (Figure 2-13);
- Project security using a combination of perimeter security fencing, controlled access gates, on-site security patrols, lighting, electronic security systems, and/or remote monitoring;
- Desert tortoise exclusion fencing, which would vary for the Proposed Actions and alternatives (Figure 2-14 shows typical desert tortoise fencing);
- Drainage control, which would vary for the Proposed Action and alternatives;
- Breakaway fencing around areas where fences cross washes to allow flows to pass in major storm events;
- An option for an on-site water well or a water pipeline extending from the Moapa Paiute Travel Plaza to the Project site, or an alternate option for trucking water; and
- Four temporary on-site water storage tanks or ponds and pump systems of varying sizes during construction.

Page 2-5 is revised as follows:

Cleaning would occur by manual methods using brushes and air ~~or~~ , using robotic systems, or other methods that utilize new technology can be used as long as the methods do not involve the transporting in of a substantial amount of water and the methods cannot result in runoff of water or any other substance from panel surfaces.

Page 2-7 is revised as follows:

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Staging would generally be confined to graded areas such as access roads ~~and~~ the O&M ~~building area~~, and an adjacent 5-acre (2-hectare) area, as well as at gen-tie pole locations (also shown in Figure 2-18).

Page 2-8 is revised as follows:

A rubber-tracked skid steer or a steel-tracked excavator could also be used. These vehicles typically have a footprint of approximately 4 feet (1.2 meters) per track. Solar array rows are typically spaced 20 feet (6 meters) apart. One vehicle used for mowing can likely access two solar array rows at a time. Accounting for the possibility that one set of tracks would traverse down each row, ~~so~~ approximately 8 feet (2.4 meters) to 10 feet (3 meters) of vegetation would be crushed every 40 feet (12 meters) in a worst-case scenario in the mowed areas. From three to 10 passes by mowing and construction equipment would be ~~are~~ needed to install each set of solar array rows. Passes are typically needed to install pile posts, to install racking and tracker system, to install the panels, to wire the panels, and then to restore any surface along the route, as needed.

Page 2-9 is revised as follows:

Operation and Maintenance

The solar field would need to have vegetation periodically mowed or trimmed to a height of 18 to 24 inches. Vegetation under the solar arrays would be cut or trimmed ~~with motorized equipment during the winter or~~ by hand in off-road areas during panel cleaning to a height that allows the vegetation to maintain its habitat function for desert tortoise and to maintain hydrology patterns on the site while not impacting the functionality of the solar panels. Motorized mowing equipment would not be used once tortoise are reintroduced to the solar field. Trimming would only occur with hand tools that can be mechanical or motorized. Trimming would only occur in the solar array areas where vegetation can affect the panels, equipment, or access. It is anticipated that trimming would occur every few years but not annually and would not be performed all at once (that is, a few portions of the site would be mowed each year). Each area would not likely need trimming more than once every 5 or more years.

Page 2-9 is revised as follows:

Under the Hybrid Alternative, approximately 65 percent of the solar arrays would be constructed using mowing for a total of approximately ~~4,460~~ 4,489 acres (~~1,805~~ 1,816 hectares).

Page 2-10 is revised as follows:

In traditional development areas, mowing and disk and roll, and panel construction (including construction methods, equipment, workforce, and schedule) would occur as described for the Proposed Action.

Page 2-10 is revised as follows:

Under NEPA, the “preferred alternative” is a preliminary indication of the Lead Agency’s preference of action among the Proposed Action and alternatives. A NEPA Lead Agency may select a preferred alternative for a variety of reasons, including the agency’s priorities, in addition to the environmental considerations discussed in the EIS. In accordance with NEPA (40 CFR

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1502.14(e)), the BLM ~~preliminarily~~ has identified the Hybrid Alternative as the preferred alternative.

Chapter 3 Affected Environment and Environmental Consequences

Table 3.0-1 on page 3-2 is revised as follows:

Table 3.0-1 Geographic Extent of the Cumulative Effects Analysis by Resource Topic

Resource Topic	Geographic Extent	Explanation
Geology and Acoustics	Within and adjacent to the Project site	These resources have localized effects that do not generally combine or accumulate regionally. Cumulative effects are not likely to occur beyond the immediate area of effect. For example, noise diminishes quickly and would not combine with noise from projects more than a few thousand feet away.
Soils, Water Resources, and Jurisdictional Waters	Watershed; Lower White River Flow System for groundwater	Impacts from other projects within the same areas surface hydrologic connectivity and within the connected groundwater system could accumulate. Soil destabilization and erosion from other projects in the same areas of surface water hydrologic connectivity could occur downstream.
Wildlife and Special Status Species, Vegetation; Mojave Desert tortoise	Within a 50-mile (80-kilometer) radius of the Project site and within the Northeastern Mojave Recovery Unit for Mojave desert tortoise	Projects within this distance would be expected to affect similar vegetation, habitat, and wildlife. This distance generally accounts for the area within which a similar population of a species or habitat could occur. Projects within the same recovery unit would affect habitat necessary to conserve the genetic, behavioral, morphological, and ecological diversity necessary for long-term sustainability of the species.
<u>Threecorner milkvetch</u> , Land Use, Recreation, Air Quality, Socioeconomic, Environmental Justice, Public Health and Safety; and Mineral Resources	Clark County	These resources tend to have overlapping regional impacts. Clark County is the logical administrative unit to assess cumulative impacts from projects. <u>The majority of the modeled threecorner milkvetch habitat and population groups in Nevada are located in Clark County.</u>
Climate Change	Nevada and California	Climate change is a global phenomenon. Cumulative impacts were considered for the states where the renewable energy from the solar facility could offset emissions from carbon-based energy generation sources.
Visual Resources, Cultural Resources, Paleontology, Native American <u>Religious</u> Concerns, Old Spanish National Historic Trail	Within 25-mile (40-kilometer) radius of Project site	Projects within this distance could result in adverse impacts on the same types of visual, cultural, historic Native American, or paleontological resources. Resources within this distance are more likely to originate from the same ethnographic group or from the same timeframe based on geologic formations or history.

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Resource Topic	Geographic Extent	Explanation
Transportation	Regional and local roadways (I-15, Valley of Fire Road, State Route [SR] 169)	Projects that use the same roadways would have the potential for cumulative effects.

Footnote 4 on page 3-3 is revised as follows:

(174 Power Global 2019, Armantrout 2017, BIA 2015, BIA 2013, BLM 2012a, BLM 2013, BLM 2008b, BLM 2014b) (BLM 2015a, BLM 2014c, BLM 2014d, BLM 2016a, BLM 2014e, BLM 2012b, BLM 2010b, BLM 2009, BLM 2010c) (BLM 2010d, BLM 2018b, Clark County 2018, Clark County n.d., First Solar 2018, Gilroy 2018, NextEra Energy, Inc. 2016, NDOT 2018) (SEC 2011, Solar Energy Zones n.d., Streater 2018, SunPower 2019, USAF 2011, Vrobison 2018) (BLM 2010a, USAF 2006, National Agriculture Imagery Project 2017) (Severts 2018a, 8minutenergy Renewables 2018, BLM 2018a, Crescent Peak Renewables, LLC 2017, NDOT n.d.) (Choquette 2018, MVProgress 2018, NV Energy 2018, Severts 2018b, Brean 2018a) (Brean 2018b, Laura 2018, Patterson 2018a, Horn 2018, Harmon 2018, 99 ABW Public Affairs 2018, Patterson 2018b) (BOR 2016, Blazi 2018, BIA 2013, BIA 2015, BLM 2018c, NextEra Energy, Inc. 2016, Power Technology 2019) (NV Energy 2019a, NV Energy 2019b)

Table 3.0-2 on page 3-4 is revised as follows:

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Table 3.0-2 Cumulative Projects in the Project Area

Number	BLM Serial Number	Project Name	Project Type	Approximate Size	Status
1.	N-93321	Harry Allen Solar Energy Center Project (130-MW)	Energy	715 acres (289 hectares)	Operational by the end of 2020.
2.	N-88313	Apex Solar Project (20-MW)	Energy	156 acres (63 hectares)	Constructed
3.	N-93306/ N-94479	Playa Solar Project (200-MW)	Energy	1,700 acres (688 hectares)	Constructed
4.	N/A	Nellis Air Force Base Area III Solar Project (14.2-MW)	Energy	140 acres (57 hectares)	Constructed
5.	N/A	Nellis Air Force Base Area I Solar Project (15-MW)	Energy	160 acres (65 hectares)	Constructed
6.	N/A	Moapa Solar Project (250-MW)	Energy	2,000 acres (809 hectares)	Constructed
7.	N/A	<u>Arrow Canyon Solar Project (Formerly known as the Moapa Solar Energy Center (200-MW))</u>	Energy	850 acres (344 hectares)	<u>Not constructed Anticipated operation in December 2022</u>
8.	N-93337	Dry Lake Solar Energy Center Project (150-MW)	Energy	694 acres (281 hectares)	Predevelopment phase
9.	N-93586	Dry Lake Solar Energy Center at Harry Allen (20-MW)	Energy	155 acres (63 hectares)	Construction will occur over 12 to 24 months; Predevelopment phase
10.	N-95554	Dry Lake East Solar Designated Leasing Area Project	Energy	1,800 acres (728 hectares)	NOI released April 13, 2018
11.	N-93564	Aiya Solar Project (100-MW)	Energy	900 acres (364 hectares)	Project is paused due to lack of financing; Construction will occur over 12 months
12.	N-97443	Eagle Shadow Mountain Project (300-MW)	Energy	2,200 acres (890 hectares)	Anticipated operation on December 31, 2021
13.	N-90395	Techren I-V Project (50-MW)	Energy	2,300 acres (931 hectares)	Anticipated operation on December 31, 2020
14.	N/A or not available	Copper Mountain Solar 5 Project (250-MW)	Energy	1,200 acres (486 hectares)	Anticipated operation on December 31, 2021

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Number	BLM Serial Number	Project Name	Project Type	Approximate Size	Status
15.	N-90788	Yellow Pine Solar Project (250-MW)	Energy	9,290 acres (3760 hectares)	NOI released June 1, 2018
16.	N/A	I-15/United States Route 93 (US 93) Garnet Interchange & US 93 Capacity Improvements	Transportation	7.7 miles (12.4 kilometers)	Construction Spring 2018 to Winter 2018
17.	N/A	I-15/ Clark County 215 Northern Beltway Interchange	Transportation	15 miles (24 kilometers)	Construction 2019 to 2022
18.	N-82076	One Nevada Transmission Line Project (ON Line Project)	Transmission	236 miles (380 kilometers)	Constructed and operational
19.	N-86359	Harry Allen to Eldorado 500 kV Transmission Line Project (formerly known as the Southern Nevada Intertie Project [SNIP])	Transmission	60 miles (97 kilometers)	Construction will occur over 12 to 24 months; In service by 2020
20.	N-86357	Eastern Nevada Transmission Project	Transmission	54 miles (87 kilometers)	Construction will occur over 24 months; In service between 2018 and 2020
21.	N-86732	TransWest Express Transmission Project	Transmission	725 miles (1,167 kilometers)	Construction will occur from 2020 to 2022.
22.	N/A or not available	Reid Gardner Generating Station	Power Plant	480 acres (194 hectares)	Completion of demolition in 2019 and restoration in 2023.
23.	N/A or not available	UNEV Gas Pipeline Project	Pipeline	3882 acres (1570 hectares)	Constructed
24.	N-78803	Clark, Lincoln, and White Pine Counties Groundwater Development Project	Water	180,000 acre-feet of water (0.2 cubic kilometers) per year	Permitting and legal activities remain underway
25.	N-48857	Coyote Springs Investment Development Project	Development	42,800 acres (17,320 hectares)	Project is paused due to lack of water rights
26.	N/A	Clark County Public Lands Proposal	Land Use	400,000 acres (161,874 hectares)	Draft Proposal has been prepared
27.	N-85801	Silver State South Solar Project (250-MW)	Energy	2,000 acres (809 hectares)	Constructed and operational
28.	N-85077	Silver State North Solar Project (50-MW)	Energy	620 acres (251 hectares)	Constructed and operational

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Number	BLM Serial Number	Project Name	Project Type	Approximate Size	Status
29.	N-87836	Ivanpah Valley International Airport Project	Development	6,000 acres (2,428 hectares)	Studies initiated to move forward with the project
30.	<u>N/A</u>	<u>Southern Bighorn Solar and Storage Center (300-MW)</u>	<u>Energy</u>	<u>2,600 acres (1,052 hectares)</u>	<u>Anticipated operation in September 2023</u>

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Section 3.1 Land Use

Page 3-9 is revised as follows:

Land Use Authorizations. Under the Proposed Action, the Project could conflict with existing land use authorizations. The Project's gen-tie lines have the potential to create safety conflicts or incompatibilities with existing and proposed transmission lines where the lines must cross (Smith and Albert 2018), including the Crystal-Moapa 500 kV Line, the Navajo-McCullough 500 kV Line, the IPP DC Line, and the TransWest Express Transmission Project (Figure 3.1-1). The heights of the transmission lines must be engineered such that the crossings meet safety requirements for separation among other considerations. A Cooperative Engineering Agreement would be required, as identified in the POD. Safety precautions may require the Project's gen-tie lines be constructed with heights in excess of 200 feet to avoid conflicts with existing transmission lines. All planned structures taller than 199 feet AGL require an obstruction evaluation as prescribed by the FAA. A copy of this evaluation must be provided by the Applicant to BLM.

Page 3-10 is revised as follows:

Installing solar panels within the corridor could would create an incompatible use that prevents conflicts with future development of energy infrastructure by occupying the space that would be needed for facilities and access. BLM will decide prior to the Final EIS in the ROD if construction of solar panels will be allowed through the Section 368 Energy COC (39-113) in development area D, recognizing the conflict. If construction is not permitted in the corridor, then the most southern portion of development area D would be orphaned. All utility connections to the orphaned portion of development area D to the rest of the Project site would need to be underground. Installation of solar panels and associated infrastructure would conflict with possible future transmission lines, which are permitted within the Section 368 Energy COC (39-113). Adverse effects on the energy corridors could occur if the solar facility is developed within the corridor.

Page 3-13 has been revised as follows:

The Hybrid Alternative includes installation of solar arrays in development area B1, in addition to the development areas identified for the Proposed Action, as well as mowing of approximately 65 percent of the solar array areas. Direct and indirect effects would be the same for land authorizations and transportation corridors and would require the same mitigation as the Proposed Action. Mitigation would be implemented to avoid or minimize conflicts with the If development were to occur in the Section 368 Energy COC (39-113), it would result in an adverse effect due to incompatible use, similar to the Proposed Action.

Section 3.2 Recreation

Page 3-17 is revised as follows:

Residual Effects

Residual effects related to the loss of OHV uses within the solar array would remain. Residual indirect but adverse effects from the visibility of the Project from recreational areas and

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designated routes (such as the BSBCB and the ~~OSNHT~~ Old Spanish Trail Road) would also remain.

Page 3-18 is revised as follows:

Restoration would take decades; therefore, under the Hybrid Alternative, approximately ~~2,578~~ 2,549 acres (~~1,043~~ 1,032 hectares) of recreational lands would remain impacted and removed from recreational use. The mowed acreage, ~~4,460~~ 4,489 acres (~~1,805~~ 1,816 hectares), would require much less restoration and would be returned to recreational and OHV use within a few years of facility decommissioning.

Section 3.3 Geology, Soils, and Mineral Resources

Page 3-22 is revised as follows:

Because no uses such as agriculture or built structures are located downstream for up to 13 miles (21 kilometers), periodic increases in fine-grained sediment loads and deposition are not expected to have adverse effects. ~~Deposition of fine sand could have beneficial effects on sensitive plant species, such as threecorner milkvetch.~~ The washes in the region generally move large quantities of all sizes of sediment as part of the natural desert processes, changing course and depositing soils during large storm events. Adverse effects from increases in transport of fine-grained sediment ~~are not expected~~ would remain, but would be minimal. Note that Section 3.5: Water Resources addresses changes in the volumes of water runoff (including over Valley of Fire Road), which would also increase given the large increase in land cleared of vegetation.

Page 3-23 is revised as follows:

Geology and Soils. Decommissioning activities would be similar to construction activities. Reclamation and decommissioning activities would be confined to previously disturbed areas to the extent practicable. Impervious surfaces would be ripped and scarified, and generally seeded in the fall without mulch. Some erosion could occur if recontoured land were to result in new drainage patterns. Substantial direct effects could occur if vegetation did not successfully grow back following decommissioning. A Decommissioning Plan would be prepared that requires restoration of native plant communities to minimize erosion and minimize prolonged exposure of bare soils. Natural revegetation is slow, but restoration techniques have been observed to initiate ecosystem recovery and accomplish project objectives in Mojave Desert study areas (Abella and Newton 2009). A Decommissioning and Site Restoration Reclamation Plan would be prepared that addresses revegetation success during decommissioning in order to minimize effects. Minimal adverse effects from erosion would remain.

Page 3-23 is revised as follows:

Residual adverse erosion effects would be limited to some increases in downstream transport of fine sediment. No residual effects would be expected on mineral resources, as the lands would be available for surface extraction upon completion of decommissioning activities and termination of the ROW.

Page 3-23 is revised as follows:

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The Hybrid Alternative would involve mowing approximately 65 percent of the solar field instead of disking, thereby reducing the overall acreage of bare soil compared to the Proposed Action. Development using traditional methods and grading would disturb ~~2,578~~ 2,549 acres of soils (~~1,043~~ 1,032 hectares) on the Project site. Mowing would result in more stable soil and would minimize the potential for wind- and water-driven erosion compared to the Proposed Action. Direct and indirect adverse effects from erosion could still occur. Implementation of mitigation measures would minimize potential adverse effects caused by erosion.

Section 3.4 Paleontological Resources

Page 3-27 is revised as follows:

Restoration would occur in accordance with the Decommissioning and Site Restoration Reclamation Plan, minimizing the potential for erosion.

Section 3.5 Water Resources

Page 3-31 is revised as follows:

Basin 218 has an estimated Perennial Yield of 2,200 acre-feet (249 hectare-meters) of water per annum, according to the Hydrographic Area Summary Report 196 prepared annually by NDWR (NDWR 2018, USGS 1986). The types of use in the basin are Industrial (6,905 acre-feet [851.7 hectare-meters]), Municipal (2,525 acre-feet [31.5 hectare-meters]), Irrigation (91 acre-feet [11.2 hectare-meters]), and Environmental (90 acre-feet [11.1 hectare-meters]); these uses combined, account for approximately 9,611 acre-feet (1,185.5 hectare-meters), a volume more than four times the Perennial Yield. Actual pumping in the California Wash Basin in 2016 was 252 acre-feet (31.1 hectare-meters) and in 2017 was 88 acre-feet (10.9 hectare-meters). The vast majority of the existing appropriations in the basin are not currently being used (Cooper 2017, Cooper 2018).

Page 3-33 is revised as follows:

Up to four 1-acre ponds (or tanks) would be created to hold water during construction, which would primarily be used for dust control. Water could be sourced from an on-site well or a pipeline from the Moapa Paiute Travel Plaza, or trucked to the Project site. The ponds, if used, would be designed with a liner and berms to ensure that the water remains only in the ponds.

Page 3-34 is revised as follows:

Flooding that could cause substantial damage on or off site is not anticipated under most conditions. Flows would remain confined in established washes for most storm events at the 10-year storm event level and below. Flood flows from the 100-year storm event are analyzed here as the likely worst-case scenario. Figures 3.5-3 and 3.5-4 present the 100-year, 6-hour pre-and post-Proposed Action development flow rates and depths, respectively, for the Project site, given removal of all vegetation over the site and maintenance of the existing drainage network.

Perimeter fencing is not anticipated to increase flooding risks or hazards. Impacts to flows and flooding would be minimal from piling installation given the small size of each footprint and that they would not be installed in drainages less than 3 feet (1 meter) in diameter (Gibson 2019).

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Further analysis of impacts on flooding in the major washes from development of the Proposed Action is presented below.

Page 3-38 is revised as follows:

Refer to the *Informational Summary of Water Rights, Supply, and Use for the Gemini Solar Project* (Panorama Environmental, Inc. 2019d) for more information on the process.

Page 3-40 is revised as follows:

The All Mowing Alternative would result in reduced potential for on-and off-site sedimentation that could impact water quality and reduced potential for on-and off-site flooding compared with the Proposed Action, because the facility would be constructed to leave the vegetation in place under the solar arrays (mowing method of construction). This alternative would reduce erosion and runoff effects, as most of the site would be left vegetated. Impacts to drainage from fencing, pilings, and roads would be minimal, as discussed for the Proposed Action. Total fill amounts are estimated at less than 1 acre (0.4 hectare) across the entire approximately 7,100-acre (2,873-hectare) site. Perimeter fencing is not anticipated to increase flooding risks or hazards. Use of chain link fencing would allow for the passage of flows and smaller debris. Breakaway fencing would be used around washes to allow flows to pass with large debris during major storm events. Access roads would also cross numerous washes. Access road crossings within the facility may require use of aggregate base. Each crossing would result in wash fill ranging from 0.01 to 0.1 acre (0.004 to 0.04 hectare). Any aggregate material needed would be placed at grade for road crossings, allowing the wash to function the same as in pre-project conditions. Loss of material into the drainages would be reduced through the use of a concrete cut-off wall. The concrete cut-off wall would be flush to the road surface so as not to interrupt flows or affect surface flows in the washes. The maximum acreage from cutoff wall construction is less than 0.01 acre (0.004 hectare) over the approximately 7,100-acre (2,873-hectare) facility. Impacts to the function of the drainages is expected to be minimal from the cut-off wall and road crossings. Solar panel post pilings may also need to be installed in washes. Pilings would be 6-inches by 4-inches (15-centimeters by 10-centimeters) and installed into waters of the United States only where it cannot be avoided. The pilings would be spaced approximately 21 feet (6.4 meters) apart. No pilings would be installed in any ephemeral drainages less than 3 feet (1 meter) wide. The USACE determined that the installation of the pilings in waters of the United States does not constitute a discharge of fill material as defined in 33 CFR. 323 (Gibson 2019). Impacts to flows and flooding would be minimal from piling installation given the small size of each footprint and that they would not be installed in drainages less than 3 feet (1 meter) in diameter. Drainage impacts from fencing would be further reduced as the fence would be lifted 8 inches (20 centimeters) from the ground to allow for passage of desert tortoise. Breakaway fencing may also still be used as well. Impacts to flows and flooding would be minimal from piling installation given the small size of each footprint and that they would not be installed in drainages less than 3 feet (1 meter) in diameter.

Page 3-41 is revised as follows:

Potential flooding and water quality impacts from sedimentation from the hybrid Alternative would be similar to those described for the Proposed Action in the areas of traditional development. Impacts related to fencing, pilings, and roads from the estimated 1 acre (0.4

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hectare) of fill would be similar to the All Mowing Alternative. Modeled flow rate changes in existing major washes are shown in Table 3.5-3 and Figure 3.5-5. MMs WR-1, WR-2, WR-3, and GS-1 would also apply to this alternative. Both erosion and flooding effects would be reduced under this alternative compared to the Proposed Action due to the reduced soil and vegetation disturbance over 65 percent of the site. Impacts to incised and functional drainages would be reduced as fill of jurisdictional drainages would be completely avoided except for access road crossings, utility trenching, posts, and installation of erosion control measures (none of which would include berms or channels that could impact desert tortoise in mowed areas). Development area D would be mowed, as such, no filling or rerouting of drainages would be required or allowed, per MM WR-1.

Section 3.6 Vegetation and Jurisdictional Waters

Page 3-45 is revised as follows:

Known occurrences are grouped into 17 population groups centered on the confluence of the Muddy and Virgin rivers (The Nature Conservancy 2007).

Page 3-46 is revised as follows:

According to this model, approximately 2,320 acres (939 hectares) of suitable habitat for threecorner milkvetch is in the Project area. According to the 2011 model, approximately 748 700 acres (291 283 hectares) of occupied habitat (identified as “known occurrences” on Figure 3.6-19) is within the Project area (all development areas, excluding F).

Page 3-46 is revised as follows:

This is a short-lived perennial herb in the Plantain Family (*Plantaginaceae*) and grows in rocky calcareous, granitic, or volcanic soils in areas that receive enhanced runoff, such as washes, along roadsides, in rocky areas such as scree at the base of rock outcrops, rocky slopes, and rock crevices in creosote-white burrobush, blackbrush (*Coleogyne ramosissima*), and mixed-shrub desert vegetation communities (NNHP 2001).

Page 3-47 is revised as follows:

The majority of lost habitat would be the creosote bush-white burrobush bursage scrub vegetation community (6,524 acres [2,640 hectares]).

Page 3-48 is revised as follows:

Special Status Plants. The Proposed Action would directly impact and remove 748 700 acres (291 283 hectares)⁹ of habitat for threecorner milkvetch, which is approximately 9 percent of the population group in this area, based on the 2011 model (Hamilton and Kokos 2011). The California Wash population group of threecorner milkvetch comprises 8,228 acres (3,330 hectares). The Project would directly impact 9 percent of the California Wash population group. The BLM manages 5,415 acres (2,191 hectares) of the California Wash population group. The Project would directly impact 13 percent of the habitat of this the California Wash population group within BLM management (some in this area occur on adjacent tribal land) would be impacted by the Project (Southwest Ecology LL 2018) (The Nature Conservancy 2007).

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Through GIS analysis, the BLM estimates that approximately ~~24,983~~ 25,985 acres (~~10,110~~ 10,515 hectares) of threecorner milkvetch habitat ~~historically existed~~ exists on BLM lands in ~~southern~~ Clark County, Nevada, with a total of ~~40,646~~ 40,650 acres (~~16,448~~ 16,450 hectares) ~~historically present~~ on all lands. Disturbance to threecorner milkvetch habitat was determined by collecting geospatial data for areas that are developed or disturbed. These areas are not contributing to the long-term population viability of this species. Approximately ~~11,690~~ 3,261 acres (~~4,731~~ 1,320 hectares) of that original habitat have now been developed or disturbed ~~or are within ROW corridors or disposal areas~~. Across all land ownership, approximately 86 percent of habitat is remaining, while 14 percent is developed or disturbed, and of the habitat on BLM lands, approximately 87 percent is remaining, while approximately ~~29~~ 13 percent of habitat is ~~therefore developed or disturbed or subject to development~~. The direct impacts of the Proposed Action would increase disturbance of the remaining habitat across all lands by 2 percent and across BLM lands by 3 percent. ~~The threecorner milkvetch population group that would be impacted by the Proposed Action is one of the largest areas of occupied habitat and is the largest area unimpacted by disposal boundaries, ROWs, and recreation. All populations on BLM land are threatened by OHV, noxious and non-native weeds, and development. Many of the populations on NPS land also have noxious and non-native weed problems.~~

Indirect impacts are assumed to occur within a mile-wide (0.4-hectare-wide) buffer of the entire Project site. Adverse, indirect impacts on threecorner milkvetch would occur from the proliferation of non-native weeds and introduction of new non-native weeds, herbicide use due to drift, and alteration of wash flows and potential loss of suitable habitat for population expansion. Given the buffer width of the Project site, approximately ~~3,439~~ 3,457 additional acres (~~1,392~~ 1,398 hectares) of threecorner milkvetch habitat would be indirectly impacted by the Proposed Action. Edge effects from disturbance and untreated weeds within disturbed areas would result in the proliferation of noxious and non-native weeds from the Project site to adjacent BLM lands. ~~The~~ BLM does not have the resources to manage for increased presence of Sahara mustard and other weeds that are likely to proliferate outside the Project site as a result of the Proposed Action. Sahara mustard densities are highest in ~~development area E, one of the two development areas with modeled~~ threecorner milkvetch habitat.

Indirect impacts from noxious and non-native weeds would result in long-term adverse impacts to threecorner milkvetch habitat outside the Project area. Direct and indirect impacts would affect 4,157 acres (1,682 hectares) of the estimated ~~8,233~~ 34,925 acres (~~3,331~~ 14,134 hectares) ~~of the undeveloped threecorner milkvetch habitat in Clark County this population group~~, or ~~50~~ 12 percent. The Proposed Action would directly and indirectly disturb 18 percent of habitat remaining on BLM lands. Within the California Wash population group, 51 percent of the total habitat, and 77 percent of the habitat under BLM management would be directly and indirectly impacted by the Proposed Action. This population group (the California Wash) is the second largest and least impacted of any of the population groups. Downstream impacts related to changes in ephemeral drainages, which provide the sandy soils the threecorner milkvetch requires, could impact an even larger proportion of this population group.

~~The combined direct and indirect disturbance associated with the Proposed Action would account for a loss or disturbance to 25 percent of threecorner milkvetch habitat remaining within BLM ownership (habitat not developed and not within a disposal boundary or ROW corridor).~~

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~~Accounting for this increase in lost or disturbed habitat, approximately 39 percent (up from 29 percent) of all habitat on BLM land would be lost.~~

Footnote 9 was added to Page 3-48 as follows:

⁸ Habitat loss for threecorner milkvetch was evaluated using GIS data in the Universal Transverse Mercator projection.

Page 3-49 is revised as follows:

MM VG-2 includes numerous provisions for threecorner milkvetch habitat, including obtaining a permit for ~~impacts on threecorner milkvetch take of plants~~ from the Nevada Division of Forestry ~~for any habitat within the Project site~~ prior to any ground disturbance, collection of seeds prior to ground disturbance, ~~bonding for the cost of seed collection and~~ seed storage by an approved botanical garden, on-site monitoring, removal of Sahara mustard, completion of herbicide treatment prior to March 15 and only using hand pulling thereafter, no use of aminopyralid in modeled threecorner milkvetch habitat (and Nye milkvetch habitat), ~~additional bonding~~, and WEAP training.

Page 3-50 is revised as follows:

Adverse, direct effects on rosy twotone beardtongue are not anticipated because only two occurrences were identified during the botanical surveys, and these were located outside of the development areas. Populations in adjacent habitats could be indirectly affected by fugitive dust, proliferation of weeds, and herbicide drift.

Page 3-50 is revised as follows:

If control measures were not conducted or a treatment window was missed, weeds could proliferate and weed control costs could quickly become prohibitive. The BLM does not have funding to adequately address existing weed issues, and therefore, could not address increased weed densities caused by the Proposed Action. Weed increases are likely to affect sensitive plant habitat.

Page 3-50 is revised as follows:

~~If control measures were not conducted or a treatment window was missed, weeds could proliferate and weed control costs could quickly become prohibitive.~~ Weed species are responsive to seasonality, precipitation, and growing conditions.

Page 3-50 is revised as follows:

MM VG-2 includes ~~bonding for the cost of~~ seed collection and storage by an approved botanical garden, on-site monitoring, removal of Sahara mustard, ~~additional bonding~~, and WEAP training.

Page 3-51 is revised as follows:

Loss of 121,300 cacti and yucca would be significant because even after Project decommissioning, these species would probably not naturally occupy the site again for hundreds of years (S. R. Abella 2010). Therefore, the Proposed Action would have an adverse impact on cacti and yucca in southern Nevada. Indirect impacts of increased weeds in the surrounding areas would increase the risk of fire, which cacti and yucca are not adapted to and cannot survive. MM VG-1 includes salvaging some percentage of cacti and yucca, which would reduce impacts on the

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salvaged plants. Loss of cacti and yucca would still occur, and direct impacts to the majority of these plants on the Project site would be adverse.

Page 3-53 is revised as follows:

Implementation of a Decommissioning ~~and Site Reclamation~~ Plan would reduce potential adverse effects on vegetation during decommissioning. The ~~Decommissioning and Site Restoration~~ Reclamation Plan would also be implemented during decommissioning and ensure that equipment does not spread invasive weeds; this plan would include restoration and revegetation measures based on BLM's requirements, including soil reclamation as needed to remove herbicide or dust palliative residues. Other future BMPs would be required. Prior to an NTP, a ~~Decommissioning and Site Restoration~~ Reclamation Plan would be prepared approved. Implementation of this plan would reduce some of the adverse impacts on native vegetation through the restoration of areas to pre-construction conditions; however, it could still take at least a century to return the site to near pre-disturbance conditions. The ~~Decommissioning and Site Restoration~~ Reclamation Plan would include a description of acceptable seed types, seeding techniques, a monitoring and reporting plan, and performance standards, per MM VG-1. The plan would also include measures to address Project site restoration until all success criteria, based on the BLM's restoration template, are met.

Page 3-53 is revised as follows:

Cumulative Effects

Vegetation, Special Status Plants, Invasive Species, Cacti, and Yucca. Many of the cumulative projects would involve facility grading and construction, resulting in the loss of native vegetation communities, cacti, yucca, and special status plant species in the desert region. The BLM estimates that approximately 24,983 25,985 acres (40,110 10,516 hectares) of threecorner milkvetch habitat exists on BLM lands in southern Nevada, with a total of 40,646 40,650 acres (46,448 16,450 hectares) on all lands. Disturbance to threecorner milkvetch habitat was determined by collecting geospatial data for rights of ways, developed areas, cumulative project areas, and disposal areas. These cumulative areas would not contribute to the long-term population viability of this species because the areas are either already disturbed or are zoned for disturbance. This does not account for indirect impacts, weeds, or OHV routes through habitat. Approximately 11,690 14,968 acres (4,731 6,057 hectares) of that original habitat have now been developed or are within cumulative project boundaries, ROW corridors, or disposal areas. Approximately 29 37 percent of all habitat is therefore developed or subject to development. In addition to the impacted threecorner milkvetch population groups, BLM has several applications for ROWs that would permanently disturb habitat in unimpacted population groups. The Proposed Action would increase the overall habitat loss for threecorner milkvetch to 39 40 percent, up from 37 percent (an increase of 3 percent) of the estimated habitat available on all land, and an increase to 39 percent on BLM land, up from 35 percent (an increase of 4 percent), which would be an adverse cumulative impact.

Page 3-54 is revised as follows:

The majority of affected habitat would be creosote-~~white burrobush shrubland bush and white bursage scrub~~ community.

Page 3-54 is revised as follows:

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MM GS-1 requires implementation of erosion control and bank stabilization devices, and MM VG-1 requires implementation of BMPs to avoid alterations of drainages, which shall reduce but not ~~eliminating~~ eliminate the Project's contribution to the cumulative adverse effect.

Page 3-54 is revised as follows:

An estimated 20 ~~to 25~~ percent of the vegetation is expected to be crushed.

Page 3-54 is revised as follows:

The majority of affected habitat would be creosotebush and white bursage scrub community. ~~Mowing~~ Trimming would be needed approximately every 5 or more years.

Page 3-55 is revised as follows:

Crushing approximately 20 ~~to 25~~ percent of the vegetation could also result in some spread of weeds.

Page 3-55 is revised as follows:

Dust palliatives would not be used on the Project site under the All Mowing Alternative ~~(unless MM T&E-1 is implemented)~~.

Page 3-55 is revised as follows:

Special Status Plants. The All Mowing Alternative would ~~still directly~~ impact approximately 718 426 acres (291 172 hectares) of threecorner milkvetch habitat, ~~which would result in an increased disturbance of 1 percent of the remaining habitat (2 percent of remaining habitat managed by the BLM).~~ The All Mowing Alternative would directly impact 5 percent of the total California Wash population group and 8 percent of the population group managed by the BLM. Development area D would be smaller than the Proposed Action under this alternative, ~~but the area remaining is threecorner milkvetch habitat.~~ Leaving soils largely intact ~~would~~ could allow the species seed bank to remain viable and, therefore, some potential for growth of threecorner milkvetch within the Project site. Vegetation and drainages maintenance may minimize the hydrologic changes that would occur, which could also reduce impacts from changes in sand deposition. The solar arrays, however, may change aeolian processes that create the ideal habitat for this species. The likelihood of threecorner milkvetch growth within the mowed areas is unknown. Although it is unknown if threecorner milkvetch would grow on the Project site during O&M, mitigation measures that require the soils to be left intact ~~would~~ could preserve habitat for the threecorner ~~milkvetch~~ milkvetch such that the plant might eventually be able to recolonize the site.

Indirect impacts from the spread of invasive species would be less than the Proposed Action. Because native vegetation would remain on site, soil disturbance and hydrologic condition changes would be minimized; the off-site and indirect impacts on threecorner milkvetch habitat from edge effects are expected to be minimized. The All Mowing Alternative would have an indirect effect on approximately 3,291 acres (1,332 hectares), for a total effect on approximately 3,717 acres (1,504 hectares) of threecorner milkvetch habitat. Direct and indirect impacts would affect 11 percent of remaining undeveloped threecorner milkvetch habitat (16 percent of

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~~remaining BLM habitat). Within the California Wash population group, 45 percent of the total habitat, and 69 percent of the habitat under BLM management would be directly and indirectly impacted by the All Mowing Alternative. percent of the estimated 8,233 acres (3,332 hectares) in this population group, compared with the approximately 50 percent impact of the population group under the Proposed Action.~~

~~Approximately 2 percent (5,415 acres [2,191 hectares]) of threecorner milkvetch habitat remaining within BLM ownership (habitat not developed and not within a disposal boundary or ROW corridor) would be directly disturbed by the All Mowing Alternative. Accounting for this increase in lost or disturbed habitat, approximately 31 percent (up from 29 percent) of all habitat on BLM land would be lost.~~

Page 3-56 is revised as follows:

MM VG-2 includes numerous provisions for threecorner milkvetch habitat, including obtaining a permit for ~~impacts on threecorner milkvetch take of plants~~ from the Nevada Division of Forestry ~~for any habitat within the Project site~~ prior to any ground disturbance; collecting seeds prior to ground disturbance; ~~bonding for the cost of seed collection and~~ seed storage by an approved botanical garden; on-site monitoring; removing Sahara mustard; completing herbicide treatment prior to March 15 and only using hand pulling thereafter; no use of aminopyralid in modeled threecorner milkvetch habitat (and Nye milkvetch habitat); ~~additional bonding~~; and WEAP training.

Page 3-56 is revised as follows:

~~Nye milkvetch could occur primarily in mowed areas but also in some areas of traditional development.~~ Through mowing, Nye milkvetch soils and habitat could be maintained. Under the All Mowing Alternative, indirect impacts would include potential introduction, spread, and proliferation of weeds to adjacent habitat. Herbicide drift and fugitive dust could also impact adjacent populations. Soils and native vegetation would be maintained, and weed spread through active management would be minimized or greatly reduced compared with the Proposed Action. Direct impacts on Nye milkvetch occurrences and habitat would be adverse but less than with the Proposed Action. The seed bank would likely not be destroyed, and Nye milkvetch may be able to repopulate mowed areas after Project construction. Adverse effects could still occur if the plant does not adapt to modified habitat in the mowed areas, and where roads could remove habitat or result in localized weeds. MM VG-1 would also apply to Nye milkvetch to reduce potential impacts.

Page 3-57 is revised as follows:

MM VG-2 includes ~~bonding for the cost of~~ seed collection and seed storage by an approved botanical garden, on-site monitoring, removal of Sahara mustard, ~~additional bonding~~, and WEAP training.

Page 3-57 is revised as follows:

Cacti and yucca under 24 inches (61 centimeters) tall in the mowed areas would be left in place and avoided during mowing, thus reducing the number that would require relocation. Larger cacti and yucca would be cut down and allowed to resprout rather than removed and salvaged. Most

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cacti are expected to resprout if trimmed to less than 18 to 24 inches (46 to 61 centimeters); ~~however, yucca may not survive and shall be salvaged~~ per MM VG-1. Since soils and ~~vegetating~~ vegetation would be left in place, yucca could possibly regrow in the future or after decommissioning but would take a long time, potentially many decades or longer. Cactus and yucca in areas of permanent disturbance where vegetation is removed (e.g., roads, gen-tie lines) would be salvaged and transplanted into the mowed areas or sold, in accordance with MM VG-1 and the Site Restoration Plan. Of the approximately 120,000 or more cacti and yucca that may be encountered, some percentage would be lost, but it would be much less than with the Proposed Action. Loss of cacti and yucca would be adverse, but maintenance of the soils and native vegetation would have less impacts than with the Proposed Action.

Page 3-57 is revised as follows:

Up to 20 to 25 percent of the mowed areas could be driven over, and some unknown amount of biocrust and desert pavement could be damaged.

Page 3-58 is revised as follows:

Native seed banks and soils ~~would be~~ may be maintained over most of the Project site. Vegetation recovery in the approximately 3 percent of the site where it would be removed may be slower due to loss of seed bank and compaction, but restoration efforts could be focused here. Due to ongoing weed management over the life of the Project, weeds may still be present along road vectors but could be controlled with an intensive Integrated Weed Management Program.

No impacts are anticipated on waters of the United States during site decommissioning.

Implementation of a Decommissioning Plan and Site Restoration Reclamation Plan would reduce potential adverse effects on vegetation during decommissioning. Implementation of the Decommissioning and Site Restoration Reclamation Plan would ensure that equipment does not spread invasive weeds as it removes equipment and the plan would include restoration and revegetation measures based on BLM's requirements, including soil reclamation as needed to remove herbicide or dust palliative residues. Other BMPs available in the future would be required. Restoration under the All Mowing Alternative would be achieved much more quickly than under the Proposed Action (in a few years instead of potentially a century). The Decommissioning and Site Restoration Reclamation Plan would include a description of acceptable seed types, seeding techniques, a monitoring and reporting plan, and performance standards, per MM VG-1. The Decommissioning and Site Restoration Reclamation Plan would also include measures to address Project site restoration until all success criteria, based on the BLM's restoration template, are met.

Page 3-59 is revised as follows:

Some impacts on Nye milkvetch individuals and habitat would occur, but the species seed bank would likely be maintained within the solar field such that this plant could regrow. The approximately ~~718 426~~ acres (~~291 172~~ hectares) of threecorner milkvetch habitat within the solar development area could be directly impacted.

Page 3-59 is revised as follows:

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Cumulative Effects

Vegetation, Special Status Plants, Invasive Species, Cacti, and Yucca. Overall effects of cumulative projects with the All Mowing Alternative would be similar to those described for the Proposed Action. Under the All Mowing Alternative, the Project would increase the overall habitat disturbance for threecorner milkvetch percent to 34-39 percent (from the current 29 cumulative 37 percent loss for an increase of 2 percent) of the estimated habitat available on all land, and an increase to 38 percent on BLM land, up from 35 percent (an increase of 3 percent). The All Mowing Alternative, in combination with cumulative projects, which would be have an adverse cumulative impact. The soils, however, would remain intact, which has the potential to provide habitat for the plant in the future. Implementation of the Site Restoration Plan and MM AQ-1 and native vegetation maintenance on the Project site under the All Mowing Alternative would reduce the Project's cumulative contribution to overall weed spread in the region compared with the Proposed Action.

Page 3-59 is revised as follows:

Ephemeral Drainages and Waters of the United States. The effects of the All Mowing Alternative in combination with cumulative projects would be the same as less than described for the Proposed Action. However, the All Mowing Alternative's cumulative contribution to effects would be minimal and not adverse since only 1 acre (0.4 hectares) would be filled.

Page 3-60 is revised as follows:

Native Vegetation Communities. Overview. The Hybrid Alternative includes constructing approximately 65 percent of the facility using mowing (4,460 4,489 acres [1,805 1,816 hectares]) and the remaining 35 percent of the facility using disk and roll/traditional methods (2,578 2,549 acres [1,043 1,032 hectares]).

Page 3-60 is revised as follows:

An estimated 20 to 25 percent of the vegetation is expected to be crushed.

Page 3-60 is revised as follows:

As with the All Mowing Alternative, approximately 20 to 25 percent of vegetation crushed for array construction could also result in some spread of weeds.

Page 3-60 is revised as follows:

Traditional Development Areas. Areas constructed using traditional development methods would result in the complete removal of vegetation as well as the churning and compaction of soils. Native vegetation would not regrow during Project operation in these areas. Construction of the Hybrid Alternative would cause the direct and permanent loss of 2,578 2,549 acres (1,805 1,032 hectares) of vegetation and the habitat it provides within the Project site and along the gen-tie lines. The vegetation communities lost would be similar to those described for the Proposed Action (primarily creosote-white burrobush). These communities provide important habitat for wildlife, from insects to birds to endangered species. The areas that would be developed using traditional methods for the Hybrid Alternative correspond to the modeled threecorner milkvetch habitat.

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Pages 3-61 and 3-62 are revised as follows:

The seed bank would likely not be destroyed, and Nye milkvetch may be able to repopulate mowed areas after Project construction. Adverse effects could still occur if the plant does not adapt to modified habitat in the mowed areas and where roads could remove habitat or result in localized weeds. MM VG-1 would also apply to Nye milkvetch to reduce potential impacts.

Traditional Development Areas. Based on a 2011 model (Hamilton and Kokos 2011), the Hybrid Alternative would directly impact approximately ~~718 699~~ 291 283 acres (~~291 283~~ 291 283 hectares) of threecorner milkvetch habitat, which would result in an increased disturbance of 2 percent of the remaining habitat (3 percent of remaining habitat managed by the BLM), the same as with the Proposed Action. The Project would directly impact ~~13 8~~ 13 8 percent of the ~~habitat of this California Wash~~ habitat of this California Wash population group and 13 percent of the population group under BLM management (some of the population group in this area occurs on adjacent tribal land) ~~Southwest Ecology LL 2018) (The Nature Conservancy 2007).~~ Southwest Ecology LL 2018) (The Nature Conservancy 2007). This level of impact is not consistent with BLM's commitment under the MSHCP to have no net loss of habitat for this species.

Indirect impacts are assumed to occur within a mile-wide (0.4-hectare-wide) buffer of the traditional development areas under the Hybrid Alternative. Adverse, indirect impacts on threecorner milkvetch would occur from the proliferation of non-native weeds and introduction of new non-native weeds, herbicide use due to drift, and alteration of wash flows and potential loss of suitable habitat for population expansion. Given the buffer of the traditional development areas, a similar acreage of habitat to the Proposed Action would be impacted. Edge effects from disturbance and untreated weeds within disturbed areas would result in the proliferation of noxious and non-native weeds from the Project area to adjacent BLM lands. Downstream impacts related to changes in ephemeral drainages, which provide the sandy soils the threecorner milkvetch requires, could impact an even larger proportion of this population group, similar to the Proposed Action.

The Hybrid Alternative would have an indirect effect on 3,320 acres (1,344 hectares), for a total effect on 4,019 acres (1,626 hectares). The combined direct and indirect disturbance associated with the Hybrid Alternative accounts for a loss of or disturbance to ~~25 12~~ 25 12 percent of the total threecorner milkvetch habitat remaining (18 percent of the habitat remaining within BLM ownership) (habitat not developed and not within a disposal boundary or ROW corridor). Accounting for this increase in lost or disturbed habitat, approximately 39 percent of all habitat on BLM land would be lost, up from the estimate of existing disturbance to threecorner milkvetch original habitat of 29 percent. Within the California Wash population group, 48 percent of the total habitat, and 74 percent of the habitat under BLM management would be directly and indirectly impacted by the Hybrid Alternative.

MM WILD-1 requires minimizing the Project footprint to only the area needed for power generation, thus potentially reducing some direct impact acreage but not likely changing indirect effects. MM VG-2 includes numerous provisions for threecorner milkvetch habitat, including obtaining a permit for impacts on threecorner milkvetch take of plants from the Nevada Division of Forestry for any habitat within the Project site prior to any ground disturbance; collecting seeds prior to ground disturbance; bonding for the cost of seed collection and seed storage by an approved botanical garden; prohibiting disk and roll in development areas C, D, and E areas of modeled threecorner milkvetch habitat (only drive and crush would be allowed) (see Figure 3.6-

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21); on-site monitoring; removing Sahara mustard; completing herbicide treatment prior to March 15; and only using hand-pulling thereafter, no use of aminopyralid in modeled threecorner milkvetch habitat (and Nye milkvetch habitat), ~~additional bonding~~, and WEAP training.

The use of drive and crush instead of disk and roll per MM VG-2 could reduce the potential for loss of habitat as well as off-site impacts. If soils and root systems are maintained in threecorner milkvetch habitat areas, native vegetation could regrow and thus reduce the potential for weed propagation. Soils and seed banks ~~would~~ may not be destroyed with use of drive and crush, compared with disk and roll methods. With intensive treatment under an Integrated Weed Management Plan and PUP, invasive weeds and the indirect impacts of weed spread up to 1 mile (0.4 hectare) off the site would be reduced. This mitigation for drive and crush would be much more effective under the Hybrid Alternative than if it were applied to the Proposed Action since the other 65 percent of the Project site would be mowed under this alternative. Weed proliferation, dust, and invasive species spread would be reduced in mowed areas. Indirect impacts on threecorner milkvetch could be reduced under this alternative with the application of drive and crush in areas where traditional methods would have been used per MM VG-2. Although it is unknown if threecorner milkvetch would grow on the Project site during O&M, mitigation measures that require the soils to be left intact will preserve habitat for the threecorner milkvetch such that the plant might eventually be able to recolonize the site. MM VG-2 would also reduce impacts to any Nye milkvetch occurring within ~~development areas C, D, and E~~ areas of modeled threecorner milkvetch habitat.

Page 3-62 is revised as follows:

MM VG-2 would also reduce impacts to any Nye milkvetch occurring within ~~development areas C, D, and E~~ the areas of modeled threecorner milkvetch habitat.

Page 3-63 is revised as follows:

MM VG-1 requires that the Site Restoration Plan and Integrated Weed Management Plan include identifying and treating problem weed areas before starting construction; monitoring of problem areas to detect new populations; treating weed populations; and implementing prevention measures, including WEAP training, vehicle and equipment cleaning protocols, and construction reporting. ~~If control measures were not conducted or a treatment window was missed, weeds could proliferate and weed control costs could quickly become prohibitive.~~

Pages 3-63 and 3-64 are revised as follows:

In addition to the Integrated Weed Management Plan and the PUP, MM VG-2 includes ~~bonding for the cost of seed collection and~~ seed storage by an approved botanical garden; prohibiting disk and roll in ~~development areas C, D, and E~~ areas of modeled threecorner milkvetch habitat (only drive and crush would be allowed); on-site monitoring; removing Sahara mustard; ~~additional bonding~~; and WEAP training. The use of drive and crush instead of disk and roll per MM VG-2 would reduce the potential for loss of habitat as well as off-site impacts for the Hybrid Alternative. If soils and root systems are maintained, native vegetation could regrow and thus reduce the potential for weed propagation. Compared with disk and roll methods, soils and seed banks ~~would~~ may not be destroyed with use of drive and crush. With intensive treatment under an Integrated Weed Management Plan, invasive weeds and the indirect impacts of weed spread off

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site would be reduced if only drive and crush methods are used. This mitigation for drive and crush would be much more effective under the Hybrid Alternative than the Proposed Action since ~~the other~~ 65 percent of the Project site would be mowed, as previously stated. Weed proliferation, dust, and invasive species spread would be reduced in mowed areas. These measures could reduce some adverse effects on native vegetation and special status species from the spread of invasive weeds. Adverse direct and indirect impacts from invasive weeds would still occur from increased disturbance in the area and introduction and the expected proliferation of weeds.

Page 3-64 is revised as follows:

Larger cacti and yucca would be cut and allowed to resprout in mowed areas rather than be removed and salvaged. Most cacti are expected to resprout if trimmed to less than 18 to 24 inches (46 to 61 centimeters); ~~however, yucca may not survive and would be salvaged~~ per MM VG-1. Because soils and vegetation would be left in place, yucca could possibly regrow in the future or after restoration, but this would take a long time—potentially many decades or longer. Yucca and cacti in areas of traditional development would be removed, as would their habitat from disk and roll. Cactus and yucca in these areas of permanent disturbance where vegetation is removed (e.g., traditional development, roads, gen-tie lines) would be salvaged and transplanted into the mowed areas or sold, in accordance with MM VG-1 and the Site Restoration Plan. MM VG-2 requires drive and crush be used instead of disk and roll in ~~the traditional development areas of modeled threecorner milkvetch habitat~~, which would reduce some impacts by keeping soils and likely the seed banks intact.

Page 3-64 is revised as follows:

Up to 20 to 25 percent of the mowed areas could be driven over and some unknown amount of biocrust and desert pavement could be damaged.

Page 3-64 is revised as follows:

MM VG-2, which requires the use of drive and crush instead of disk and roll in ~~the traditional development areas~~ areas of modeled threecorner milkvetch habitat would reduce impacts.

Page 3-65 is revised as follows:

MM VG-2 requires that only drive and crush is used in ~~traditional development areas~~ areas of modeled threecorner milkvetch habitat under the Hybrid Alternative. The regrowth of native vegetation and the reduced disturbance of soils would reduce hydrologic and downstream impacts but may not completely avoid them. Changes in sand and sediment deposition and flow patterns could still occur, particularly in the remaining areas of traditional development and within the first few years before the crushed vegetation grows back but would be reduced as compared with the Proposed Action.

Page 3-65 is revised as follows:

Implementation of MM VG-2, which requires only drive and crush construction methods in ~~traditional development areas~~ areas of modeled threecorner milkvetch habitat, could reduce effects in traditional development areas, reducing weeds and likely maintaining native vegetation and seed banks during the life of the Project.

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Page 3-66 is revised as follows:

The Decommissioning and Site Restoration Reclamation Plan would include a description of acceptable seed types, seeding techniques, a monitoring and reporting plan, and performance standards, per MM VG-1. The Decommissioning and Site Restoration Reclamation Plan would include measures to address restoration of the Project site until all success criteria, based on the BLM's restoration template, have been met, including soil reclamation as needed to remove herbicide or dust palliative residues. Traditional development areas under this alternative would have similar restoration effects as the Proposed Action. The 2,578 2,549 acres (1,043 1,032 hectares) developed using traditional methods could take over 100 years to restore. Implementation of MM VG-2 using drive and crush instead of disk and roll in all portions of the traditional development areas under this alternative would allow for faster restoration, similar to the All Mowing Alternative.

Residual Effects

Construction of the Hybrid Alternative would cause permanent loss of approximately 2,378 acres (1,043 hectares) of creosote-white burrobush shrubland alliance, and other native vegetation communities; however, implementation of MM VG-2 that requires this acreage 447 acres to be developed using drive and crush instead of disk and roll would reduce some of these impacts. Native vegetation would be crushed in this area but would be able to regrow. Some impacts to Nye milkvetch individuals and habitat would occur, but the species seed bank would likely be maintained within the solar field such that the plants could regrow.

Approximately 718 699 acres (291 282 hectares) of threecorner milkvetch habitat within the solar development area could be directly impacted. The direct effects are unknown, but all acreage under the solar panels could be lost for the life of the Project. There would be indirect impacts from dust and spread of invasive species; however, these impacts would be lessened using drive and crush instead of disk and roll during Project construction. Also, indirect impacts would be less than with the Proposed Action. Loss of cacti and yucca would occur over 35 percent of the Project site. Approximately 117 acres (47 hectares) of biocrust and 142 acres (57 hectares) of desert pavement would be lost in the traditional development areas, although this amount would be reduced by MM VG-2 that requires drive and crush instead of disk and roll in areas of modeled threecorner milkvetch habitat.

Cumulative Effects

Vegetation, Special Status Plants, Invasive Species, Cacti, and Yucca. The description of cumulative projects' effects on the percentage of acreage loss of native vegetation communities, cacti, yucca, and special status plant species and their habitat in the desert region is the same as presented above for the Project Action. The Hybrid Alternative would increase the direct overall habitat loss disturbance for threecorner milkvetch to approximately 39-40 percent of the estimated habitat available (up from the existing cumulative habitat loss of 29 37 percent for an increase of 3 percent) of the estimated habitat available on all land, and an increase to 39 percent on BLM land, up from 35 percent (an increase of 4 percent), which would be an adverse cumulative impact. With implementation of MM VG-2, which requires use of drive and crush instead of disk and roll in traditional development areas areas of modeled threecorner milkvetch habitat, indirect effects would occur under this alternative but would be less than under the Proposed Action.

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Page 3-67 is revised as follows:

Ephemeral Drainages and Waters of the United States. Cumulative effects of the Hybrid Alternative would be ~~the same as~~ less than described for the Proposed Action, ~~except~~ The Hybrid Alternative contribution to cumulative impacts for placement of fill would be placed on approximately 1 acre (0.4 hectare) of jurisdictional drainages, which is just a tenth of what would be filled under the Proposed Action and would not be adverse.

Section 3.7 Wildlife, Migratory Birds, and Special Status Species

Page 3-70 is revised as follows:

To prevent injury to wildlife, the ponds, if used, would be fitted with exclusion devices and/or textured material on the bottom and sides of the ponds to allow animals to escape, per MM WILD-6.

Page 3-71 is revised as follows:

Water ponds (if used instead of tanks) on the construction site could also present a danger to wildlife species.

Page 3-71 is revised as follows:

Decommissioning. Decommissioning could result in short-term negative effects on individual wildlife and habitats within and adjacent to the Project site. Potential negative impacts from the loss of habitat during the operation of the solar facility would be reduced as reclamation proceeds. Reclamation would be a long and likely slow process, but would follow a Decommissioning ~~Plan~~ and a Site ~~Restoration~~ Reclamation Plan. It would take several decades or longer before the site becomes functioning habitat again.

Page 3-71 is revised as follows:

Golden eagles are known to nest in the mountains from 2 to 10 miles ~~(3 to 16 kilometers)~~ from the Project site.

Page 3-72 is revised as follows:

Construction would require the temporary development of up to four, 1-acre (0.4-hectare) ponds or tanks to store construction water. Migratory birds may be attracted to the water. The ponds, if used instead of tanks, would not contain any chemicals that are not approved in the PUP, which would address any potential for harm to wildlife, including migratory birds. To prevent injury to birds, the ponds, if used, would be fitted with exclusion devices that could include floating balls, fencing, or covering (non-netted) to minimize use by birds, per MM WILD-6.

Page 3-72 is revised as follows:

Decommissioning could result in short-term negative impacts on individual birds and habitats within and adjacent to the Project site due to equipment use and disturbance during decommission activities. Potential negative impacts would be reduced as reclamation proceeds. Reclamation would be a long and likely slow process but would follow a Decommissioning ~~Plan~~ and a Site

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~~Restoration Reclamation~~ Plan. It would take several decades or longer before the site becomes functioning habitat again, similar to existing conditions.

Page 3-73 is revised as follows:

Up to 20 ~~to 25~~ percent of the vegetation within the mowed areas would be crushed during solar array installation.

Page 3-73 is revised as follows:

To prevent injury to wildlife, the ponds, ~~if used~~, would be fitted with exclusion devices and/or textured material on the bottom and sides of the ponds to allow animals to escape, per MM WILD-6.

Page 3-74 is revised as follows:

Some vegetation may be crushed during facility removal, similar to that described for construction, but is expected to rebound within a few years. A ~~Decommissioning and Site Restoration Reclamation~~ Plan ~~and Decommissioning Plan~~ would be prepared and implemented for the All Mowing Alternative.

Page 3-75 is revised as follows:

Construction would require the temporary development of up to four, 1-acre (0.4-hectare) ponds ~~or tanks~~ to store construction water, similar to the Proposed Action. Migratory birds may be attracted to the water. The ponds, ~~if used instead of tanks~~, would not contain any chemicals that are not approved in the PUP, which would address any potential for harm to wildlife, including migratory birds. To prevent injury to birds, the ponds, ~~if used~~, would be fitted with exclusion devices that could include floating balls, fencing, or covering (non-netted) to minimize use by birds, per MM WILD-6.

Page 3-75 is revised as follows:

Decommissioning could have impacts on migratory birds during the process of removing the facility, similar to the impacts of construction. Restoration of the Project site to functional habitat would be much quicker than for the Proposed Action, since much of the native vegetation would remain in place. A ~~Decommissioning and Site Restoration Reclamation~~ Plan ~~and Decommissioning Plan~~ would be prepared and implemented for the All Mowing Alternative.

Page 3-76 is revised as follows:

Effects on wildlife would be reduced for the Hybrid Alternative compared to those under the Proposed Action. Impacts on native desert creosote bush scrub vegetation that provides habitat for numerous wildlife species would occur due to the permanent removal of ~~2,603 2,574~~ acres (~~1,053 1,042~~ hectares) of vegetation for construction of the solar facility and gen-tie lines (as compared with 7,097 acres [2,872 hectares] for the Proposed Action). Up to 20 ~~to 25~~ percent of the vegetation within the mowed areas would be crushed during solar array installation. Mowed areas would comprise ~~4,460 4,489~~ acres (~~1,805 1,816~~ hectares). This vegetation is expected to rebound within a few years of construction, based on evidence from other Mojave Desert solar

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facilities where vegetation was crushed and allowed to regrow, as stated for the All Mowing Alternative.

Page 3-76 is revised as follows:

To prevent injury to wildlife, the ponds, if used, would be fitted with exclusion devices and/or textured material on the bottom and sides of the ponds to allow animals to escape, per MM WILD-6.

Page 3-77 is revised as follows:

Where vegetation is completely removed in the areas of traditional development, restoration would take decades or longer before these areas return to functional wildlife habitat. A Decommissioning and Site Restoration Reclamation Plan and Decommissioning Plan would be prepared and implemented for the Hybrid Alternative.

Page 3-77 is revised as follows:

Construction and development of the solar facility and gen-tie lines under the Hybrid Alternative would result in the loss of approximately 2,603 2,574 acres (1,053 1,042 hectares) of habitat. Alteration of habitat could have an impact on avian species that use desert creosote bush scrub habitat. While mowed vegetation would be considered altered habitat, effects would be reduced compared to those under the Proposed Action. Similar habitat is common across the region.

Page 3-78 is revised as follows:

Construction would require the temporary development of up to four, 1-acre (0.4-hectare) ponds, or tanks, to store construction water, similar to the Proposed Action. Migratory birds may be attracted to the water. The ponds, if used instead of tanks, would not contain any chemicals that are not approved in the PUP, which would address any potential for harm to wildlife, including migratory birds. To prevent injury to birds, the ponds, if used, would be fitted with exclusion devices that could include floating balls, fencing, or covering (non-netted) to minimize use by birds, per MM WILD-6.

Page 3-78 is revised as follows:

Restoration of the Project site to functional habitat would be much quicker than for the Proposed Action in mowed areas but similar in areas of traditional development (and would take several decades in these areas). A Decommissioning and Site Restoration Reclamation Plan and Decommissioning Plan would be prepared and implemented for the Hybrid Alternative.

Page 3-79 is revised as follows:

- MM VG-1: Requirements of the Site Restoration Plan and, Integrated Weed Management Plan, and Decommissioning and Site Reclamation Plan (from Section 3.6: Vegetation and Jurisdictional Waters)

Section 3.8 Threatened, Endangered, and Candidate Species

Page 3-80 is revised as follows:

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The Project area is identified as a desert tortoise connectivity corridor, located within predominantly Priority 2 land, contiguous high-value tortoise habitat, with some areas in the south as Priority 1 land, potential tortoise habitat linkages (refer to Appendix N for more information) (USFWS 2011). The Project site generally supports high-quality habitat for the species, and, of the studies completed, this region has the highest known densities of desert tortoise in the Northeastern Mojave Recovery Unit.

Table 3.8-1 on page 3-81 is revised as follows:

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Table 3.8-1 Desert Tortoise Survey Areas and Results and Population Density Estimates

Survey Area	Acres (Square Kilometers) of Total	Percent of Total	Total Desert Tortoise Observed	Number of Desert Tortoise ¹	Acres (Square Kilometers) per Tortoise ¹	Estimated Number of Desert Tortoises using USFWS Confidence Intervals	Estimated Density of Desert Tortoises per Square Mile (Square Kilometers)
Proposed Action Areas							
Development Area A	862 (3.4)	11.5%	14	14	62 (0.2)	28	21.1 (8.2)
Development Area B	3,460 (13.8)	46.2%	94	74	47 (0.2)	149	27.8 (10.7)
Development Area C	471 (1.9)	6.3%	6	6	79 (0.3)	12	16.6 (6.4)
Development Area D	1,913 (7.7)	25.6%	11	10	191 (0.8)	20	6.8 (2.6)
Development Area E	402 (1.6)	5.4%	1	1	402 (1.6)	2	3.2 (1.3)
Gen-tie and Collector Lines	103 (0.4)	1.4%	2	2	52 (0.2)	4	25.3 (9.8)
Buffer Areas	270 (1.1)	3.6%	0	0	-	0	0 (0)
TOTAL	7,481 (30.3)	100%	128	107	-	215	18.6 (7.2)
Alternative Areas							
Development Area B1	141 (1.1)	3.8%	2	2	71 (0.3)	4	16.6 (7.1)
Development Area B2	979 (3.9)	26.3%	23	20	49 (0.2)	36	23.9 (9.2)
Development Area F	1,832 (7.3)	49.2%	1	0	-	0	0
Development Area G	770 (3.1)	20.7%	16	14	55 (0.2)	25	21.3 (8.21)
TOTAL	3,772 (15.3)	100%	42	36	-	65	21.8 (8.4) 16.1 (6.2) ²
Notes:							
^{1.} ≥ 180 mm MCL							
^{2.} Not including development area F, which does not appear to support desert tortoise due to the sandy soil type present here. Without development area F included, which does not appear to support desert tortoise due to the sandy soil type present here, the density is 8.4 adult tortoises per square kilometer. Development area F is not part of the Project site.							

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Page 3-82 is revised as follows:

Construction and Operation/Maintenance. Direct effects on desert tortoises within the Project area would occur during construction and O&M of the Project. Direct effects include the ~~loss take~~ of up to the estimated 215 adult tortoise (and the estimated 900 or more juveniles) expected to be found on the Project site during construction; death or injury to tortoises within the construction areas of the gen-tie line routes; and permanent loss of desert tortoise habitat.

The Proposed Action would result in the direct or indirect ~~loss take~~ of up to all tortoises found on the Project site, since there are no places within the Northeastern Mojave Recovery Unit where the tortoises can be moved. Construction would result in the removal of all vegetation and habitat over approximately 7,097 acres (2,872 hectares) that otherwise supports desert tortoise and would include fencing that would exclude tortoise movement. The ~~take-loss~~ of all adult and juvenile tortoises on the Project site, in addition to the loss of habitat, would also result in a substantial adverse impact on the species and the local population. MM WILD-1 requires that the footprint of the solar facility be reduced to the minimum size needed; however, substantial loss of habitat and a substantial ~~take-loss~~ of tortoises would still occur.

Construction and O&M of the gen-tie line could result in additional injury or ~~take~~ mortality of desert tortoises found along the gen-tie routes and some loss of habitat for the creation of access roads.

Page 3-83 is revised as follows:

Reclamation would be a long and likely slow process but would follow a Decommissioning Plan and a Site ~~Restoration~~ Reclamation Plan.

Page 3-83 is revised as follows:

Construction and Operation/Maintenance. The area of indirect effects is defined as the area within 5 miles (8 kilometers) of the Project site, which is the general range of tortoises. Indirect effects do not involve ground-disturbing activities but instead are effects related to habitat fragmentation and reduced connectivity; habitat degradation and harm caused by lower quality food sources from the spread of weeds, erosion, and fugitive dust; increased predation; lighting; and accidental spills.

Page 3-83 is revised as follows:

In particular, the movement of tortoises ~~from east to west in in an east-west direction to~~ and from the North Muddy Mountains would be constrained by the Proposed Action. The fencing of the facility would form an approximately 6-mile-long (9.6-kilometer-long) barrier to east-west ~~migration movement~~ and an approximately 3-mile-wide (4.8-kilometer-wide) barrier to north-south ~~migration movement~~. The southern end of development area D is approximately 1 mile (1.6 kilometers) from the Muddy Mountains (since tortoise habitat is limited to the valley and not the mountains) and would create a pinch-point for tortoise ~~migration movement~~ in a northeast/southwest direction past that point.

Page 3-84 is revised as follows:

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The Applicant would implement the WEAP, as well as the Raven Management Plan, Site Restoration Plan, Integrated Weed Management Plan, PUP identifying the allowable herbicides and applications (as discussed in Chapter 2: Proposed Action and Alternatives), SWPPP, Stormwater Quality Monitoring Program, SPCC Plan, Health and Safety Plan (including waste management), MM AQ-1, MM GS-1, and Lighting Plan to reduce indirect adverse effects on desert tortoise. While effects can be reduced, they may not be sufficiently minimized even with mitigation.

Caliche is known to support tortoise burrowing. Caliche deposits were found in the subsurface, particularly in the southern portions of development area B, portions of development area A, and the southern portion of development area D (Ninyo and Moore 2018). Tortoises, however, were primarily found utilizing caliche layers for burrows in the banks of major washes where the area below the layer is accessible in the bank cut. For overland areas, tortoises cannot burrow through the cemented layers. The Project includes piles that penetrate the subsurface and could therefore encounter and penetrate caliche layers. Indirect impacts to tortoise burrowing are not anticipated, however, since no piles would be driven near the major washes where the tortoises may be found burrowing under the caliche layers.

Page 3-84 is revised as follows:

Construction, and O&M, and decommissioning of the Proposed Action would not result in indirect effects on Critical Habitat for desert tortoise or any primary constituent elements due to the distance to these areas. Very limited, if any, connectivity is found between the Project area and Critical Habitat in the Mormon Mesa CHU. Due to the very limited connectivity to the Mormon Mesa CHU, although the Project site has been identified as a desert tortoise connectivity corridor, impacts on gene flow in the Mormon Mesa CHU are not anticipated.

Indirect impacts on Moapa dace would not occur, even if the on-site groundwater pumping option is exercised. Refer to Section 3.5: Water Resources for a discussion of groundwater drawdown. Based on modeling, there would be no groundwater drawdown impacts from Project pumping at the Muddy River or the springs feeding the Muddy River that support Moapa dace. Cumulative groundwater impacts that could affect the Moapa dace are discussed later in this section.

Decommissioning. Similar indirect effects during decommissioning could occur as those described for construction. A Decommissioning Plan and Site Reclamation Plan would be prepared for the BLM's review and approval. Decommissioning would have no impact on the Moapa dace.

Page 3-84 is revised as follows:

Residual effects include the long-term (potentially 100 years or more) loss of approximately 7,097 acres (2,872 hectares) of desert tortoise habitat, which would reduce the overall regional habitat available for species recovery. The loss of up to 215 adult desert tortoises and an unknown number of estimated 900 juveniles would have adverse residual effects on the species and the local population size.

Page 3-85 is revised as follows:

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The Proposed Action would directly impact and result in the loss of approximately 7,097 acres (2,872 hectares) (0.27 percent) of suitable desert tortoise habitat out of the total 2.63 million acres (1.06 million hectares) available within the Northeastern Mojave Recovery Unit. Other projects with large-scale and permanent direct and indirect impacts on desert tortoise habitat include several solar projects within the cumulative effects area. These projects include solar developments within the Dry Lake Solar Energy Zone (SEZ) (#8 and #9 from Table 3.0-1), with an estimated 3,000 acres (1,214 hectares) of impacts on desert tortoise habitat (USFWS 2015b); the Moapa Solar Project (#6 from Table 3.0-2), with an estimated 1,100 acres (445 hectares) of tortoise habitat impacts; the Aiya Solar Project (#11 from Table 3.0-2), with an estimated 672 acres (272 hectares) of impacts; the Southern Bighorn Solar and Storage Center (#30 from Table 3.0-2), with an estimated 2,600 acres (1,052 hectares) and the Eagle Shadow Mountain Solar Project (#12 from Table 3.0-2). The impact area for the latter project is not yet known, but may be on the order of 2,000 to 3,000 acres (809 to 1,214 hectares). Solar projects, therefore, could cumulatively result in approximately ~~15,000~~ 18,000 acres (~~6,070~~ 7,284 hectares) of impacts, or 0.6 percent of the regional habitat, with the Gemini Solar Project, along with the Moapa Solar Project, located in areas of the highest known densities of desert tortoise and contributing nearly half of those impacts. Transmission projects also have effects on desert tortoise and their habitat due to increased predation, disturbance, and proliferation of weeds, contributing to cumulative impacts on the species and its habitat. The Project would contribute to the cumulative adverse loss of desert tortoise habitat in the region. Implementation of MMs WILD-1 through WILD-5 would reduce but not eliminate the Project's contribution to cumulative, adverse effects on tortoises, which would include the loss ~~or take~~ of up to 215 adult individuals and additional juveniles in addition to the loss of habitat.

As previously stated, other large-scale cumulative projects, including solar projects, could also create habitat fragmentation that results in connectivity impacts in the particular regions where the Project is located. No other projects that could inhibit connectivity are located within the area of geographic constraints for the Project, that is between the I-15 to the west, the Muddy River to the North, the Muddy Mountains to the east and south, and the Dry Lake Range to the southwest. The TransWest Transmission project (#21 from Table 3.0-1) is located in this area, but as a linear transmission project, connectivity impacts are minimal. Cumulative impacts on connectivity of the population of tortoise in the Project area is not anticipated.

Several of the cumulative projects (#1, ~~#7~~, #8, #9, #12, #19, #21, ~~and #24~~, and #30 from Table 3.0-2) may also require groundwater for dust suppression.

Page 3-85 is revised as follows:

It is expected that approximately 254 adult desert tortoises, and 1,300 or more juveniles, would be encountered on the Project site for the All Mowing Alternative (an estimated ~~21.8~~ 22.8 adult tortoises per square mile [~~8.4~~ 8.8 per square kilometer]).

Table 3.8-2 on page 3-86 is revised as follows:

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Table 3.8-2 Adult Desert Tortoise Impacts by Alternative

Alternative	<u>Total</u> Desert Tortoises	Desert Tortoises for Distant Translocation ¹	Desert Tortoises for Reintroduction and Short Distance Translocation
Proposed Action	215	215 ²	0
All Mowing Alternative	254	34	220
Hybrid Alternative	219	36	183
Note: 1. <u>Distant translocation in this context refers to a location in the area of the Project site to the south as opposed to another region of the Northeastern Mojave Recovery Unit.</u> 2. <u>A sufficient location for off-site translocation of desert tortoise is not available.</u>			

Page 3-86 is revised as follows:

The purpose of mowing under this alternative is to maintain vegetation and soils within the solar facility so that the desert tortoises would have the opportunity to return to the site once construction is completed (recognizing that the habitat on the Project site would be substantially altered). Desert tortoises would need to be moved or translocated from the Project site prior to and during construction and decommissioning. The process would include installing desert tortoise fencing around the development area being constructed or decommissioned, conducting health assessments on the desert tortoises found, and translocating the tortoises outside of the fenced construction areas so that facility construction could occur without the risk of injuring or killing them. The density of desert tortoises outside the Project site is assumed to be similar to that on the Project site (Table 3.8-1). The average densities do not meet the definition of a “depleted population” identified in the USFWS desert tortoise translocation guidance for distant translocation; however, this alternative includes different types of translocation and the opportunity for desert tortoise to reoccupy the solar facility after construction, which makes it a viable alternative. Translocation would be conducted in accordance with a Biological Opinion, Translocation Plan, and Incidental Take Permits issued by the USFWS. Three types of translocation could occur; short distance translocation, reintroduction, and distant translocation. With short distance translocation, tortoises could be translocated outside of the Project site but within 1,640 feet (500 meters) of where they were captured. Tortoises that would be reintroduced, would be held in a pen and then reintroduced at the capture location within the Project site once construction is complete. For distant translocation, approximately 34 adult desert tortoises and an unknown number of juveniles would be translocated to a site south of development areas B and D. Approximately 220 adult tortoises would be reintroduced to the Project site or translocated into the Project area after construction and decommissioning. The impacts of the All Mowing Alternative, compared to the Proposed Action and Hybrid Alternative, are summarized in Table 3.8 2.

Direct impacts could occur during the health assessments and the physical movement of desert tortoises prior to construction and decommissioning. Holding pens (at the Great Basin Institute) would need to be used until the desert tortoises could be reintroduction into the mowed areas of the solar facility after construction. Ultimately, all of the desert tortoises in the holding pens would be reintroduced to the Project site or translocated back into the Project area.

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The All Mowing Alternative would reduce the ~~number of~~ adverse effects on desert tortoises ~~taken~~, as compared with the Proposed Action. Ongoing operation would result in additional impacts on desert tortoises from human activity during solar facility maintenance. Additional desert tortoise protection measures would be required to reduce effects during O&M, as identified in the Project-specific Biological Opinion and Incidental Take Permit.

Page 3-87 is revised as follows:

Tortoises moved immediately outside of the site are expected to remain approximately within their home ranges and thus would be familiar with the area and individual tortoises in the area. By contrast, the 34 translocatees moved to the south of development areas B and D would be unfamiliar with the release area. As a result, these tortoises may be at an increased risk of predation due to temporary unfamiliarity and may experience increased agonistic encounters with residents. The local density of desert tortoises moved immediately outside of the site would approximately double, temporarily, until home ranges shifted. Resources are expected to be adequate in the short term, but agonistic encounters could increase due to social disruption. These tortoises would be adjacent to construction- and decommissioning-related activities for over a year, which could result in unknown levels of stress and behavioral disruption. Only tortoises determined to be healthy and asymptomatic of respiratory disease would be translocated. Even so, there is a minor risk that both translocatees and resident tortoises may be adversely affected due to the spread of diseases.

The All Mowing Alternative would reduce other indirect impacts that could occur from habitat fragmentation and changes in connectivity as compared with the Proposed Action. Desert tortoises would be able to move through the Project site (except for a few acres occupied by the O&M facilities and substations) to the North Muddy Mountain to the northeast and to the south, similar to existing conditions.

Several other indirect effects described for the Proposed Action could also occur for the All Mowing Alternative. Night lighting affects tortoise behavior and increases the visibility of tortoises at night, exposing them to potential increased predation by nocturnal predators that could be present on the Project site. Red brome and other invasive species reduce the growth and survival of juvenile desert tortoises (Esque 2019). As such, the spread of weeds, fugitive dust, and erosion, and associated reduction in the quality of cover and foraging habitat would be an indirect effect. Because the All Mowing Alternative would leave native vegetation in place, weed spread would be less under this alternative but could still be an issue given the roads, equipment, and vegetation crushing that would occur during construction. Construction and decommissioning of the solar arrays could result in the crushing of up to 20 to 25 percent of the vegetation within mowed areas.

Page 3-87 is revised as follows:

These indirect effects would be addressed through implementation of Project design features and mitigation that control soil erosion, stormwater runoff, and water quality during all phases of the Project. The Applicant would implement the WEAP as well as the Raven Management Plan, Site Restoration Plan, Integrated Weed Management Plan, PUP, SWPPP, Stormwater Quality Monitoring Program, SPCC Plan, Health and Safety Plan (including waste management), MM AQ-1, MM GS-1, and Lighting Plan to reduce indirect adverse effects on desert tortoise. Indirect

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impacts to tortoise burrowing from installation of piling through caliche are not anticipated, similar to the Proposed Action.

Pages 3-88 and 3-89 are revised as follows:

Residual Effects

While some tortoises ~~would~~ may be ~~taken~~ lost or injured under the All Mowing Alternative, the ~~take~~ adverse effect would be considerably less than under the Proposed Action. Vegetation would be removed, mowed, and crushed by equipment during the construction of access roads and solar arrays, and decommissioning of the Project, but would be maintained in all other portions of the Project site. Desert tortoise habitat over the entire solar facility acreage of 7,115 acres (2,879 hectares) would be eliminated, but tortoises could reoccupy the site ~~when~~ with modified vegetation ~~returns~~. However, it is not known whether reoccupation would be successful.

Cumulative Effects

The All Mowing Alternative would result in a similar cumulative loss of desert tortoise habitat from solar projects and other large-scale projects in the region as described for the Proposed Action. The All Mowing Alternative would make a similar contribution to cumulative impacts as the Proposed Action; however, since desert tortoise would be allowed to reoccupy the site after construction and decommissioning, the Project's contribution to the overall cumulative effects from total removal of available acreage for desert tortoise occupation would be less than that of the Proposed Action. However, if tortoises do not successfully reoccupy the facility, then the acreage would be lost to tortoises, and the impact to tortoises would be nearly the same between the All Mowing Alternative and Proposed Action. ~~Tortoise take~~ Adverse effects on desert tortoise would be reduced compared with the Proposed Action, but any ~~take~~ effect would contribute to cumulative impacts on the species. Other cumulative impacts would be the same as for the Proposed Action, including impacts on Moapa dace.

Hybrid Alternative

Direct Effects

It is expected that approximately 219 adult desert tortoises, and 1,100 or more juveniles, would be encountered on the Project site for the Hybrid Alternative (an estimated ~~21.8~~ 19.9 adult tortoises per square mile [~~8.4~~ 7.7 per square kilometer]). The purpose of mowing under the Hybrid Alternative is to maintain native vegetation within the areas of the solar facility that previously (pre-Project or baseline) had the highest densities of desert tortoises, as shown in Table. Approximately 65 percent of the facility would be mowed. The desert tortoises would be moved back into the mowed areas once construction is completed, similar to the All Mowing Alternative. On the other 35 percent of the solar facility, approximately 2,351 acres (951 hectares) of native vegetation would be permanently removed (through traditional construction methods), and desert tortoises would be permanently excluded from these areas via tortoise fencing. The areas to be constructed using traditional methods generally have the lowest pre-Project or baseline densities of desert tortoises.

Desert tortoises would need to be moved or translocated from the Project site during construction of the entire site (both areas of traditional development and mowing) and decommissioning. The process would include installing desert tortoise fencing in the solar facility area, conducting

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health assessments on the desert tortoises found, and translocating the tortoises outside of the fenced construction ~~and decommissioning~~ areas so that construction ~~and decommissioning~~ could occur without the risk of injuring or killing them. The density of desert tortoises outside of the Project site is assumed to be similar to that on the Project site (Table). The average densities do not meet the definition of a “depleted population” identified in the USFWS guidance for distant desert tortoise translocation; however, this alternative includes different types of translocation and the opportunity for desert tortoise to reoccupy 65 percent of the solar facility after construction, which makes it a viable alternative. Translocation would be conducted in accordance with a Biological Opinion, Translocation Plan, and Incidental Take Permits issued by the USFWS. Three types of translocation could occur; short distance translocation, reintroduction, and distant translocation, as described above. Approximately 183 adult tortoises would be allowed to re-enter the Project site or translocated back into the Project area and 36 adult desert tortoises and an unknown number of juveniles would be distantly translocated.

Direct impacts could occur during the health assessments and the physical movement of desert tortoises. Holding pens (at the Great Basin Institute) would need to be used until the desert tortoises could be ~~reintroduction~~ reintroduced into the mowed areas of the solar facility after construction ~~and decommissioning~~. Ultimately, all of the desert tortoises in the holding pens would be reintroduced to the Project site or translocated back into the Project area.

The Hybrid Alternative would reduce the amount of native vegetation removed from 7,097 acres (2,872 hectares) for the Proposed Action to ~~2,603-2,574~~ acres (~~1,053~~ 1,042 hectares). Maintaining ~~4,460~~ 4,489 acres (~~1,805~~ 1,816 hectares) of vegetation within the solar facility would allow desert tortoises to reoccupy the site, but the habitat would be highly modified and the success of reoccupation is unknown; therefore, this alternative is considered to result in a loss ~~or take~~ of habitat.

The number of tortoises injured or killed (~~taken~~) would be reduced compared with the Proposed Action. Ongoing O&M of the solar facility would result in some additional impacts on desert tortoises from mowing and other maintenance activities. Additional desert tortoise protection measures would be required, as identified in the Project-specific Biological Opinion and Incidental Take Permit to reduce effects during O&M.

Indirect Effects

Tortoises moved immediately outside of the site are expected to remain approximately within their home ranges and thus would be familiar with the area and individual tortoises in the area. By contrast, the 36 distant translocatees would be unfamiliar with the release area. As a result, these tortoises may be at an increased risk of predation due to temporary unfamiliarity and may experience increased agonistic encounters with residents. The local density of desert tortoises moved immediately outside of the site would approximately double, temporarily, until home ranges shifted. Resources are expected to be adequate in the short term, but agonistic encounters could increase due to social disruption. These tortoises would be adjacent to construction- ~~and decommissioning~~-related activities for over a year, which could result in unknown levels of stress and behavioral disruption. Only tortoises determined to be healthy and asymptomatic of respiratory disease would be translocated. Even so, there is a minor risk that both translocatees and resident tortoises may be adversely affected due to the spread of diseases.

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Other indirect impacts from habitat fragmentation and changes in connectivity would be reduced under the Hybrid Alternative as compared with the Proposed Action, but could still occur. The greater concern with respect to connectivity is limitation on the movement of tortoises from east to west to and from the North Muddy Mountains due to the long barrier fence along sites B, C, and D for the traditional development areas. This barrier would extend in a north-south direction for approximately 4.7 miles (7.6 kilometers). The Assuming desert tortoises reoccupy the facility and freely move through it, desert tortoise exclusion fencing around development areas A, B, and C would be a shorter barrier to connectivity; it would be aligned east to west (limiting north-south movement) and extend for approximately 3.5 miles (5.6 kilometers). The southern end of the fenced area for traditional development is approximately 2.5 miles (4 kilometers) from the Muddy Mountains and would create a pinch-point for tortoise ~~migration movement~~ past that point moving northeast towards the North Muddy Mountains or moving south. Some reduced gene flow could occur based on tortoise movement restrictions, as could localized increases in densities and stressors that could impact tortoise health and survival. The pinch point would be wider than the 1 mile created under the Proposed Action.

Page 3-90 is revised as follows:

Night lighting, spread of weeds, erosion, fugitive dust, crushing of approximately 20 to 25 percent of the vegetation in the mowed areas during construction and decommissioning, increased predators (including ravens), and increased runoff of contaminated stormwater from chemicals or herbicides could affect the desert tortoise, as described for the All Mowing Alternative.

Page 3-90 is revised as follows:

These indirect effects would be addressed through implementation of Project design features and mitigation that control soil erosion, stormwater runoff, and water quality during all phases of the Project. The Applicant would implement the WEAP, as well as the Raven Management Plan, Site Restoration Plan, Integrated Weed Management Plan, PUP, SWPPP, Stormwater Quality Monitoring Program, SPCC Plan, Health and Safety Plan (including waste management), MM AQ-1, MM GS-1, and Lighting Plan to reduce indirect adverse effects on desert tortoise. Indirect impacts to tortoise burrowing from installation of piling through caliche are not anticipated, similar to the Proposed Action.

Page 3-90 is revised as follows:

Residual Effects

While some tortoises ~~would may~~ be taken lost or injured under the Hybrid Alternative, ~~the take~~ the adverse effect would be considerably less than under the Proposed Action. Vegetation would be maintained over 65 percent of the solar development areas, but would be mowed, crushed by equipment, and removed during the construction of access roads and solar arrays, and during decommissioning of the Project. Desert tortoise habitat over the entire solar facility acreage of 7,062 (2,858 hectares) would be eliminated, but tortoises could reoccupy up to 65 percent of the site ~~when~~ with the modified vegetation ~~returns~~. However, it is not known whether reoccupation would be successful.

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Cumulative Effects

The Hybrid Alternative would result in a similar cumulative loss of desert tortoise habitat from solar projects in the region as described for the Proposed Action. The Hybrid Alternative would make a similar contribution to cumulative impacts as the Proposed Action; however, since desert tortoise would be allowed to reoccupy 65 percent of the site after construction, the Project's contribution to the overall cumulative effects from total removal of available acreage for desert tortoise occupation would be less than that of the Proposed Action. However, if tortoises do not successfully reoccupy the facility, then the acreage would be lost to tortoises, and the impact to tortoises would be nearly the same between the Hybrid Alternative and Proposed Action. ~~Tortoise take~~ Adverse effects on desert tortoise would be reduced compared with the Proposed Action, but any ~~take effect~~ would contribute to cumulative impacts on the species. Other cumulative impacts would be the same as for the Proposed Action, including impacts on Moapa dace.

Page 3-91 is revised as follows:

The BLM is in consultation with the USFWS pursuant to Section 7 of the Endangered Species Act regarding the Proposed Action, and a Project-specific Biological Opinion will be issued that includes non-discretionary, reasonable, and prudent measures, terms, and conditions to minimize tortoise take. Additional mitigation is presented below. The Section 7 consultation is underway and the Biological Opinion ~~will be~~ is included with the Final RMPA/EIS, ~~if available at that time.~~

Page 3-91 is revised as follows:

- MM VG-1: Requirements of the Site Restoration Plan ~~and~~, Integrated Weed Management Plan, and Decommissioning and Site Reclamation Plan (from Section 3.6: Vegetation and Jurisdictional Waters)

Section 3.9 Air Quality and Climate Change

Page 3-94 is revised as follows:

The Project would be required to obtain a dust control permit from the Clark County Department of Air Quality and to implement the required conditions. For the Moapa Pipeline Option, any ground disturbance that could generate dust would be subject to the Tribe's Fugitive Dust Ordinance.

Page 3-95 is revised as follows:

Climate Change. Operation of the Project would generate minimal GHG emissions. As shown in Table 3.9-4, the Project would offset a significant quantity of GHG emissions compared to the equivalent GHG emissions from energy generated at a non-renewable power plant. Potential air emissions offset by the Project would be much higher than the air emissions generated by Project operations (or construction). Compared to non-renewable energy generation, the Project would be beneficial with respect to GHG emissions. Desert landscapes and vegetation provide some degree of carbon sequestration and stock that would be lost when the site is developed using traditional methods. At the maximum level, the loss would only be a small portion of the offset achieved over the life of the Project.

Page 3-95 is revised as follows:

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A Decommissioning and Site Restoration Reclamation Plan would include restoration and revegetation measures. Implementation of the plan would restore areas to pre-construction conditions. The Decommissioning and Site Restoration Reclamation Plan would include restoration measures at the Project site until all success criteria were met. Decommissioning would return the area to its pre-construction, natural condition over time.

Table 3.9-3 on page 3-97 is revised as follows:

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Table 3.9-3 Proposed Action Operational Emissions Offset (tons per year)

Emission Source	VOC	SO ₂	CO	NO _x	PM ₁₀	PM _{2.5}
Unmitigated						
Worker Vehicles	0.11	minimal	1.15	0.17	0.06	0.01
Fugitive Dust	-	-	-	-	6,379.13	956.87
Water Trucks (Trucking Only)	-/-/0.15	minimal	-/-/0.51	-/-/1.23	-/-/0.07	-/-/0.02
Pumps/Generators (Moapa Pipeline/Well/Trucking)	0.02/0.09/0.02	0.20/0.81/0.20	0.29/1.15/0.29	0.31/1.24/ 0.31	0.02/0.07/0.02	0.02/0.07/0.02
Total (Moapa Pipeline/Well/Trucking)	0.13/0.20/0.28	0.20/0.81/0.20	1.44/2.30/1.95	0.48/1.41/ 1.71	6,379	957
Total Equivalent Emissions Generated for 690-MW Non-Renewable Energy	-	103.77	-	576.57	-	-
Emissions Offset (Moapa Pipeline/Well/Trucking)	-	~103	-	576.09/575.16/574.86	-	-
Mitigated						
Worker Vehicles	0.11	minimal	1.15	0.17	0.06	0.01
Fugitive Dust	-	-	-	-	-490.53 ^{a 1.2}	-73.58 ²
Water Trucks (Trucking Only)	-/-/0.15	minimal	-/-/0.51	-/-/1.23	-/-/0.07	-/-/0.02
Pumps/Generators (Moapa Pipeline/Well/Trucking)	0.02/0.09/0.02	0.20/0.81/0.20	0.29/1.15/0.29	0.31/1.24/0.31	0.02/0.07/0.02	0.02/0.07/0.02
Total (Moapa Pipeline/Well/Trucking)	0.13/0.20/0.28	0.20/0.81/0.20	1.44/2.30/1.95	0.48/1.41/1.71	-490.5	-73.5
Total Equivalent Emissions Generated for 690-MW Non-Renewable Energy	-	103.77	-	576.57	-	-
Emissions Offset (Moapa Pipeline/Well/Trucking)	-	~103	-	576.09/575.16/574.86	490.5	73.5
^{1.} Negative values for fugitive dust are achieved as the dust controls can often reduce dust generation below levels that would occur without the solar facility. Vegetation cover is sparse under existing conditions, so dust is naturally generated during windy conditions.						

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Emission Source	VOC	SO ₂	CO	NO _x	PM ₁₀	PM _{2.5}
2. <u>The values reported include use of water for dust control, in addition to dust palliatives and other fugitive dust controls. Fugitive dust from the Project site without use of water for dust control, but with the use of dust palliatives and other fugitive dust controls during O&M, would remain lower than existing conditions (Ratte 2019).</u>						

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Table 3.9-4 on page 3-98 is revised as follows:

Table 3.9-4 Proposed Action Operational Emissions Offset Over the Life of the Project (Metric Tons CO₂e)

Emission Source	Moapa Pipeline Option	Well Option	Trucking Option
Proposed Action – Construction	73,886	80,954	125,724
Proposed Action – Operation	28,076	28,253	28,599
Total	101,962	109,207	154,323
Total Equivalent Emissions Generated for 690-MW Non-Renewable Energy Over Life of the Project (30 years)	19,378,945	19,378,945	19,378,945
<u>Loss of Carbon Sequestration¹</u>	<u>123,323 – 1,966,848</u>	<u>123,323 – 1,966,848</u>	<u>123,323 – 1,966,848</u>
GHG Emissions Offset over Life of Project	<u>19,276,983</u> <u>17,310,135 –</u> <u>19,153,660</u>	<u>19,269,738</u> <u>17,302,890 –</u> <u>19,146,415</u>	<u>19,224,622</u> <u>17,257,774 –</u> <u>19,101,299</u>
Note:			
^{1.} Annual carbon sequestration rates vary depending on the study from 0.16 MT carbon/acre/yr to 2.52 MT carbon/acre/yr (CEC 2013). One ton of carbon is equivalent to 3.67 tons of CO ₂ .			

Page 3-98 is revised as follows:

Construction

Air Quality. The maximum ambient concentrations of pollutants would occur at the gen-tie lines during construction for the All Mowing Alternatives, similar to the Proposed Action. Resultant unmitigated ambient pollutant concentrations would be very similar to those shown for the Proposed Action in Table 3.9-1. PM₁₀ and PM_{2.5} concentrations at the gen-tie lines and solar array development area fence lines and concentrations of NO₂ at the fence line near the well would exceed NAAQS/SAAQS. MM AQ-1 would be implemented to minimize emissions. The maximum concentrations for all pollutants and averaging periods, except for 24-hour PM₁₀ and 1-hour NO₂, would be less than the NAAQS/SAAQS with emissions controls. Table 3.9-5 presents the ambient pollutant concentrations with mitigation for the All Mowing Alternative.

An adverse effect on local air quality from PM₁₀ at the gen-tie lines for all water source options and NO₂ at the fence line near the well, for the well option, could still occur, even with mitigation. PM₁₀ emissions would be higher for the alternatives than for the Proposed Action primarily due to the increased labor and equipment needed to construct mowed areas as compared with areas developed using traditional methods. Compliance with the Dust Control and Air Quality Plan and MM AQ-1 would minimize the Project's contribution to pollutant emissions in the region.

Page 3-99 is revised as follows:

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Climate Change. Construction of the All Mowing Alternative would generate slightly more GHG emissions than the Proposed Action, between 81,082 and 133,211 metric tons of CO₂e, as mowed areas require more labor and/or equipment to construct, which results in more pollutant emissions. As with the Proposed Action, these one-time emissions are significantly less than even a single year of equivalent energy production using non-renewable resources, and much less over the life of any of the All Mowing Alternatives. Compared to non-renewable energy generation, the alternative would be beneficial with respect to GHG emissions. Carbon sequestration and stock would be largely maintained under this alternative.

Operation and Maintenance

Emissions generated during O&M of the All Mowing Alternative would be similar to the Proposed Action and would be substantially less than emissions generated by a non-renewable power plant producing an equivalent amount of energy over the life of the alternative. The All Mowing Alternative would require maintenance of the vegetation over the lifetime of the Project, although vegetation trimming would occur only a few times over the 30-year life of the Project. Most vegetation is naturally less than 24 inches in height. Emissions from equipment used to maintain vegetation would be similar to the emissions from equipment needed to address herbicides and noxious weed control for the Proposed Action. Fugitive dust released from the Project site during operation would vary between the Proposed Action and the All Mowing Alternative, as shown in Table 3.9-6. Dust palliatives would be required to reduce fugitive dust emissions to below existing conditions. Compared to non-renewable energy generation, the alternative would be beneficial with respect to GHG emissions.

Page 3-99 is revised as follows:

Residual effects from concentrations of PM₁₀ exceeding NAAQS/SAAQS (all options) and NO₂ exceeding NAAQS/SAAQS (on-site well option only) and GHG emissions (all options) would remain. ~~No residual ambient concentration effects would occur if water were sourced from the Moapa Pipeline or trucked to the site.~~ Implementation of the mitigation measures would not be expected to result in any other effects.

Table 3.9-6 on page 3-100 is revised as follows:

Table 3.9-6 Comparison of Fugitive Dust Between Alternatives (tons per year)

Net Fugitive Dust	Proposed Action	All Mowing Alternative
Unmitigated		
PM ₁₀	6,379.13	2,480.71
PM _{2.5}	956.87	372.11
Mitigated^{1,2}		
PM ₁₀	-490.53	-1,753.21
PM _{2.5}	-279.67	-262.98
Notes:		

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Net Fugitive Dust	Proposed Action	All Mowing Alternative
1.	Negative values for fugitive dust are achieved as the dust controls can often reduce dust generation below levels that would occur without the solar facility. Vegetation cover is sparse under existing conditions, so dust is naturally generated during windy conditions.	
2.	The values reported include use of water, dust palliatives, and other fugitive dust controls. Fugitive dust from the Project site without use of water for dust control, but with the use of dust palliatives and other fugitive dust controls during O&M, would remain lower than existing conditions, but without use of water or dust palliatives, would be higher than existing conditions (Ratte 2019).	

Page 3-101 is revised as follows:

Climate Change. Construction of the Hybrid Alternative would generate slightly more GHG emissions than the Proposed Action, between 78,464 and 130,302 metric tons of CO_{2e}, as mowed areas require more labor and/or equipment to construct, resulting in more pollutant emissions. Cumulative impacts would be the same as for the Proposed Action. As with the Proposed Action, these one-time emissions are significantly less than even a single year of equivalent energy production using non-renewable resources, and much less over the life of any of the alternatives. Compared to non-renewable energy generation, the alternative would be beneficial with respect to GHG emissions. Carbon sequestration and stock would be maintained to a higher degree than for the Proposed Action. The losses would be minimal compared to the offsets provided by the Project.

Operation and Maintenance

Emissions generated during O&M of the Hybrid Alternative would be similar to the All Mowing Alternative. The Hybrid Alternative would require the same maintenance of vegetation and associated emissions as described for the All Mowing Alternative. Fugitive dust released from the Project site during operation would vary between the Proposed Action and the Hybrid Alternative, as shown in Table 3.9-8. Compared to non-renewable energy generation, the alternative would be beneficial with respect to GHG emissions.

Table 3.9-8 on page 3-102 is revised as follows:

Table 3.9-8 Comparison of Fugitive Dust Between for Hybrid Alternative (tons per year)

Net Fugitive Dust	Proposed Action	Hybrid Alternative
Unmitigated		
PM ₁₀	6,379.13	3,768.25
PM _{2.5}	956.87	565.24
Mitigated^{1,2}		
PM ₁₀	-490.53	-1,256.65
PM _{2.5}	-279.67	-188.50
Notes:		
1. Negative values for fugitive dust are achieved as the dust controls can often reduce dust generation below levels that would occur without the solar facility. Vegetation cover is sparse under existing conditions, so dust is naturally generated during windy conditions.		

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Net Fugitive Dust	Proposed Action	Hybrid Alternative
2.	The values reported include use of water, dust palliatives, and other fugitive dust controls. Fugitive dust from the Project site without use of water for dust control across the site and without use of dust palliatives in the mowed areas during O&M, would remain lower than existing conditions (Ratte 2019).	

Section 3.10 Visual Resources

Page 3-108 is revised as follows:

Construction of the Proposed Action would cause temporary visual impacts during installation of the Project solar facilities and ancillary systems, such as the solar arrays, battery storage systems and inverters, substations, gen-tie lines, collector system, perimeter fences, access roads, O&M facilities, ponds or tanks, and well or water pipelines.

Page 3-112 is revised as follows:

Mitigation would reduce strong contrast along Valley of Fire Road to moderate, making the Project compatible with ~~VMR~~ VRM Class III.

Page 3-113 is revised as follows:

Decommissioning. Impacts on visual resources during the decommissioning phase of the Proposed Action would reduce contrast associated with the solar facility components but increase contrast from each KOP due to the visibility of bare soils against green vegetation. Because the Proposed Action would result in extensive soil and ground alteration, restoring native vegetation could take a century or longer. Restoration and revegetation monitoring would be implemented to reduce effects. The Decommissioning and Site Restoration Reclamation Plan would also identify acceptable seed types, seeding techniques, monitoring and reporting procedures, and performance standards, per MMs VG-1 and VR-6.

Page 3-116 is revised as follows:

Restoration and revegetation monitoring would be implemented to reduce effects. The Decommissioning and Site Restoration Reclamation Plan would also identify acceptable seed types, seeding techniques, monitoring and reporting procedures, and performance standards, per MMs VG-1 and VR-6.

Page 3-117 is revised as follows:

Restoration and revegetation monitoring would be implemented to reduce effects. The Decommissioning and Site Restoration Reclamation Plan would also identify acceptable seed types, seeding techniques, monitoring and reporting procedures, and performance standards, per MMs VG-1 and VR-6.

Residual Effects

Impacts would be the same as with the Proposed Action. Maintaining the vegetation under 65 percent of the solar arrays (~~4,460~~ 4,489 acres [~~1,805~~ 1,816 hectares]) would reduce some contrast. The same mitigation would be implemented, but residual adverse impacts would occur from the gen-tie lines, which would be the same as with the Proposed Action.

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Section 3.11 Acoustics

Page 3-119 is revised as follows:

The nearest sensitive residential receptors are located approximately 13 miles (21 kilometers) north of the Project site, in Moapa Valley, and over 18 miles (29 kilometers) southwest of the project site, adjacent to Nellis AFB. Tribal ceremonies and pow wows would be considered sensitive uses and occur at the Moapa Paiute Travel Plaza, 2,080 feet (634 meters) away. Passive recreationalists who are hiking outdoors could be considered sensitive receptors. No designated biologically sensitive areas, such as an ACEC, are located in the Project area or within 0.5 mile (0.8 kilometer) of the Project area (refer to Section 3.1: Land Use).

Page 3-119 is revised as follows:

Ambient noise in the Project area ranges from between ~~37 to 44~~ 33 to 47 dB Ldn in the more remote locations away from I-15.

Page 3-120 is revised as follows:

Noise levels from the loudest construction activity (site preparation) would dissipate to 55 dBA Leq (the USEPA acceptable noise limit for limited outdoor activity) at approximately 1,350 feet (411 meters) from the noise source. Stationary residential sensitive receptors are located many miles away and would not be impacted by noise generated from Project construction. The location of tribal ceremonies and pow wows is located further than 1,350 feet (411 meters) away and would not be adversely affected by construction activities.

Section 3.12 Cultural Resources

Page 3-123 is revised as follows:

Refer to Section 3.13: Native American Religious Concerns for regulations and laws pertaining to Native American resources.

Page 3-123 is revised as follows:

The baseline description and analysis of potential effects of the Proposed Action and alternatives on cultural resources relies on a literature review and Class III archaeological surveys conducted between February 22 and July 23, 2018 ~~(BLM 2018a)~~ (Knight & Leavitt 2018), as well as on field visits in September 2018 for sites that could be indirectly affected.

Page 3-124 is revised as follows:

This previously recorded segment is ~~recommended as~~ a non-contributing element to the NRHP-eligible Old Spanish Trail/Mormon Wagon Road.

Page 3-124 is revised as follows:

The segment was not found during the 2018 Knight & Leavitt field surveys for the Project; it appears to have been destroyed during construction of the Crystal Substation and the activities associated with the numerous powerlines in the immediate area ~~(BLM 2018a)~~ (Knight & Leavitt 2018). The BLM is seeking concurrence on the finding with the SHPO that this site is a non-

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contributing element. No other segments of the Old Spanish Trail/Mormon Wagon Road were identified in the literature searches for the direct and indirect APE.

One other segment of the OSNHT ~~that~~ was not included in the state databases and therefore did not appear during the literature review for the Project.

Page 3-124 is revised as follows:

This segment was not identified during intensive Class III surveys conducted by Knight & Leavitt in 2018 but was searched for by Knight & Leavitt during a field visit on March 7, 2019, after review of the National Historic Trails Inventory Project Report (AECOM 2012).

Page 3-125 is revised as follows:

Of the 50 archaeological sites, only three sites that fall within the Proposed Action area and the considered alternatives areas are ~~recommended~~ determined by the BLM ~~to be as~~ eligible for the NRHP. One additional site is a non-contributing segment of an eligible site (the Union Pacific Railroad). Isolated occurrences or isolates, by definition, do not meet the criteria necessary for NRHP evaluation and are generally not considered significant cultural resources under NEPA.

Of the three archaeological sites ~~recommended as~~ eligible for listing in the NRHP, two are prehistoric lithic sites located in development areas C (26CK10563) and B2 (26CK1212). The other ~~recommended~~ eligible site (26CK10598), located in development area A, was identified by the Moapa Band of Paiutes as a place the tribe used throughout historic, ethnohistoric, and possibly prehistoric times. The Moapa Band of Paiutes considers it a place of significance and has requested the site be identified as a TCP. No additional places to which tribes attach cultural or religious significance have been identified within the Project area. The small segment of the Union Pacific Railroad is ~~recommended as~~ a non-contributing segment to the eligible historic site, since the site within the Project area is completely modern. The trace of the Old Spanish Trail (previously discussed) is ~~expected to be~~ a non-contributing elements to the NRHP-eligible Old Spanish Trail/Mormon Wagon Road. The trace of the Old Spanish Trail in development area B (previously discussed) is ~~recommended as~~ a contributing element to the NRHP-eligible Old Spanish Trail/Mormon Wagon Road. Concurrence from SHPO is pending.

The 12 eligible and potentially eligible sites within the indirect APE that could sustain potential visual effects from the Proposed Action were visited during the September 2018 field visit to determine NRHP status and whether further analysis of indirect effects was required. Of the 12 sites visited in the field, eight were found not to require a visual analysis because they either were not eligible upon further inspection or their eligibility was not reliant on the visual setting. The remaining four sites included three historic NRHP-~~recommended~~ eligible sites (Historic Arrowhead Trail Highway/Old Highway 91, a railroad construction camp, and relay and microwave site with road and power line) and one unevaluated/potentially eligible historic site (a historic mortared rock cistern).

Page 3-125 is revised as follows:

The ~~two~~ traces of the Old Spanish Trail (previously discussed) ~~are~~ is expected to be a non-contributing elements to the NRHP-eligible Old Spanish Trail/Mormon Wagon Road. The trace of the Old Spanish Trail in development area B (previously discussed) is recommended as a

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~~contributing element to the NRHP-eligible Old Spanish Trail/Mormon Wagon Road, although~~ Concurrence from SHPO is pending.

Page 3-127 is revised as follows:

The Applicant, BLM, SHPO, ~~OSTA~~ Old Spanish Trail Administrator, and federal OSNHT administrators (BLM and NPS) are developing a MOA and a Historic Properties Treatment Plan (HPTP) in accordance with 36 CFR Section 800.6 that will address adverse effects on historic properties resulting from the Project, as described in this analysis.

Page 3-127 is revised as follows:

Ground-disturbing construction activities have the potential to adversely affect the two prehistoric resources ~~recommended~~ eligible for listing in the NRHP that are located within the Proposed Action APE in development areas A (26CK10598) and C (26CK10563), as well as the 5,843-foot (1,781-meter) length of the “California Crossing” of the Old Spanish Trail that is a contributing element to the overall eligibility of the Old Spanish Trail/Mormon Wagon Road for listing the NRHP.

Page 3-127 is revised as follows:

The NRHP ~~recommended~~ eligible prehistoric site in development area C (26CK10563) would likely be affected by development of the facility, as would the segment of the OSNHT (including its setting, feeling, and association). The MOA and HPTP are being developed to address adverse effects on these NRHP ~~recommended~~ eligible sites, as previously described. MM CR-2 would ensure that the procedures identified in the MOA and HPTP are implemented.

Page 3-128 is revised as follows:

MM CR-1 requires that an EEA, consisting of a minimum 100-foot (30-meter) buffer, also be established around any other known ~~NRHP recommended eligible or~~ NRHP-eligible resources within 500 feet (152 meters) of the Proposed Action boundary (primarily resources found on the eastern side of the California Wash outside of development area C), and construction personnel be trained per MM CR-2 to avoid the areas. The training would include the consequences of disturbing cultural resources. The measure would minimize potential indirect adverse effects on significant cultural resources from construction.

Operation and Maintenance

Direct impacts during O&M would not occur, as new ground disturbance would not occur. The data from the known NRHP ~~recommended~~ eligible site in development area C (26CK10563) would be recovered prior to construction. The NRHP ~~recommended~~ eligible prehistoric site in development area A (26CK10598) would be entirely excluded from the Proposed Action’s footprint per MM CR-1 and therefore would not be affected during O&M.

Page 3-129 is revised as follows:

Indirect visual, auditory, and atmospheric effects due to the Proposed Action were evaluated for three historic NRHP ~~recommended~~ eligible sites (Historic Arrowhead Trail Highway/Old Highway 91, a railroad construction camp, and relay and microwave site with road and power

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line) and one unevaluated/potentially eligible historic site (a historic mortared rock cistern that was identified in the literature review but not found in the field).

Page 3-129 is revised as follows:

The Proposed Action would be visible from the NRHP- ~~recommended~~ eligible microwave relay site but would not dominate the landscape due to the presence of the Moapa Solar Project, which looks similar to the Proposed Action.

Page 3-129 is revised as follows:

The Project would cause direct impacts on the contributing elements to the NRHP- ~~recommended~~ eligible Old Spanish Trail/Mormon Wagon Road, since this resource is located within development area B.

Page 3-130 is revised as follows:

The All Mowing Alternative would involve ground-disturbing activities that could adversely affect the three ~~recommended~~ NRHP-eligible resources located in development areas A (26CK10598), B2 (26CK1212), and C (26CK10563) as well as the NRHP-eligible contributing segment of the Old Spanish Trail found in development area B.

Page 3-130 is revised as follows:

The All Mowing Alternative would involve ground-disturbing activities that could adversely affect the three recommended NRHP-eligible resources located in development areas A (26CK10598), B2 (26CK1212), and C (26CK10563) as well as the NRHP-eligible contributing segment of the Old Spanish Trail found in development area B.

Page 3-131 is revised as follows:

The setting, feel, and association of the NRHP-eligible contributing segment of the Old Spanish Trail would be restored ~~for posterity~~.

Page 3-131 is revised as follows:

Residual effects would include the removal of the ~~three two~~ NRHP-eligible resources in development areas B2 (26CK1212) and C (26CK10563).

Page 3-131 is revised as follows:

Residual and adverse effects would occur on the setting, feel, and association of the NRHP-eligible contributing segment of the Old Spanish Trail, but could be restored after decommissioning under this alternative similar to the Proposed Action. ~~Impacts on the setting, feel, and association of the NRHP-eligible contributing segment of the Old Spanish Trail would be reduced after decommissioning but would remain due to the lasting impacts on areas developed using traditional methods of construction.~~

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Section 3.13 Native American Religious Concerns

The title of Section 3.13 and the headers and footers have been revised to “3.13 Native American Religious Concerns.”

Page 3-132 is revised is follows:

This section focuses on ~~environmental and socioeconomic~~ cultural and religious concerns that are specific to Native Americans or to which Native Americans bring a distinct perspective. Several regulations, policies, and laws pertain to Native American cultural and religious concerns, including the American Indian Religious Freedom Act, the NAGPRA, and Executive Order 13007. These regulations are described in more detail in Appendix E.

Page 3-134 is revised is follows:

Geologic Features. Prominent geologic features in the Project area include the surrounding mountain ranges, including the Muddy Mountains directly south and east of the Project site and the Arrow Canyon Range further to the north. A detailed description of the Muddy Mountains and their significance to the Moapa Band of Paiutes is provided in Appendix F. The Arrow Canyon Range, located northwest of the Project area, is directly connected to the Cry Ceremony and the associated Salt Song Trail. Sections of the Salt Song Trail are located approximately 10 miles to the northwest of the Project area and extend north into the Arrow Canyon Range. The Project site is not visible from these areas. The Cry Ceremony is performed when a Southern Paiute person passes away, and specially trained singers perform the Salt Song. This song and associated spiritual trail carry the soul of the deceased along a thousand-mile journey into the spiritual world or afterlife.

Page 3-134 is revised is follows:

BLM staff traveled to and consulted with the tribes noted in Table 3.13-1, ~~of which none have expressed specific concerns about the Project to date.~~

Pages 3-134 and 3-135 are revised as follows:

Construction and operation of the Proposed Action would most likely result in the removal of plant species important to Native Americans or render them inaccessible for the life of the Project (approximately 30 years). Most of the site (over 90 percent) is comprised of creosote-white burrobush shrubland alliance, which includes traditional medicinal plants such as burro bush (*Ambrosia dumosa*), creosote bush (*Larrea tridentata*), and saltbush (*Atriplex spp.*) (Phoenix Biological Consulting 2018a). Food sources including cholla cactus (*Cylindropuntia spp.*), catclaw acacia (*Acacia greggii*), desert trumpet (*Eriogonum inflatum*), Anderson thornbush (*Lycium andersonii*), and yucca (*Yucca spp.*) are found throughout the Project site as well. Medicinal plants including Mormon tea (*Ephedra sp.*) and saltbush are also found on the Project site. These plants are all common and found throughout the region. Refer to Section 3.6: Vegetation and Jurisdictional Waters for further details and quantification of impacts on native vegetation communities. While construction and subsequent operation of the Project would render approximately 7,100 acres (2,873 hectares) of lands inaccessible, the surrounding areas contain tens of thousands, if not hundreds of thousands, of acres of similar types of habitat and vegetation—particularly on the Moapa River Indian Reservation to the north of the Project site—

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that support these traditional plants. Mesquite groves and rice grass fields, which are rare and important remnant agricultural features to Native Americans, are not found on the Project site. No concerns regarding medicinal plants or plants used as food sources were expressed during BLM consultation with the Native American tribes. Impacts would not be adverse because the Project site does not support rare medicinal or food source plants that cannot be found in the surrounding areas, and any important plants that are present are also readily available in the region.

No adverse impacts on wildlife migration that could affect Native American religious concerns are expected to occur. A well-established herd of bighorn sheep is present in the Muddy Mountains and Valley of Fire region; however, the bighorn sheep do not regularly use the Project site, and adverse effects on their migration patterns are not expected. ~~Desert tortoise is often mentioned by the Moapa Band of Paiutes as a species that should be protected and was once a food source (Stoffle, R.W., and H.F. Dobyns 1983). The Proposed Action would result in adverse impacts on desert tortoise (refer to Section 3.7: Wildlife, Migratory Birds, and Special Status Species, and Section 3.8: Threatened, Endangered, and Candidate Species).~~ Smaller game species important to Native Americans that can be found in the Project area include desert cottontails (*Sylvilagus audubonii*) and woodrats (*Neotoma lepida*), but these species are also common and accessible throughout the region. Construction and O&M would not have adverse effects on Native American religious concerns related to culturally important plants and animals.

Desert tortoise is often mentioned by the Moapa Band of Paiutes as a species that should be protected and was once a food source (Stoffle, R.W., and H.F. Dobyns 1983). The Proposed Action would result in adverse impacts on desert tortoise (refer to Section 3.7: Wildlife, Migratory Birds, and Special Status Species, and Section 3.8: Threatened, Endangered, and Candidate Species), which could in turn have adverse effects on Native American concerns.

Page 3-135 is revised as is followed:

The Proposed Action would not cause adverse effects on important geologic or geographic features, including the Arrow Canyon Range in the area of the Salt Song Trail. The Project would be constructed entirely within the valley, close to the I-15 corridor. Indirect impacts on cultural resources are addressed in Section 3.12: Cultural Resources; however, no Native American resources were identified in the indirect APE that would be adversely affected by the Proposed Action.

Page 3-135 is revised as follows:

Decommissioning

The Applicant would limit reclamation and decommissioning activities to previously disturbed areas and existing access roads to the extent practicable. Consistent with a Decommissioning and Site Restoration Reclamation Plan, the Applicant would perform restoration and revegetation of the Project site.

Page 3-136 is revised as follows:

Residual Effects

The Proposed Action would result in the loss of some common but culturally important plants and the loss of some habitat for culturally important wildlife species; however, these resources of

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concern are abundant in the region, including in the areas adjacent to the Project site, and do not represent a permanent loss of resources. Impacts would not be adverse. Impacts to desert tortoise would be adverse from the Proposed Action. While desert tortoise occupies a much greater area of the desert as compared with the solar facility site, it is a federally recognized threatened species. Impacts to this species can be assumed to be a concern to tribes.

Page 3-136 is revised as follows:

Cumulative Effects

Cumulative projects could affect known and unknown TCPs, resulting in a cumulative loss of resources considered by local tribes to be significant. Many cumulative projects in the area, including the Proposed Action, would involve vegetation removal or changes to the existing habitats, which could cumulatively affect the populations of plant and game species important to Native Americans. Due to the presence of similar habitat types in the region, the cumulative loss of culturally important vegetation and animal species would not be substantial. Quantification of impacts to desert tortoise habitat from cumulative projects is presented in Section 3.8: Threatened, Endangered, and Candidate Species. This habitat is the same habitat that is identified as important cultural and plant habitat to Native Americans. The section concludes that solar projects could cumulatively result in approximately 18,000 acres (7,300 hectares) of impacts, or 0.6 percent of the regional habitat. Impacts to desert tortoise would be cumulatively considerable as stated in Section 3.8 Threatened, Endangered, and Candidate Species.

The Proposed Action's contribution to the cumulative loss of known and unknown TCPs would be minimized with implementation of MMs CR-1 and CR-2, which require the avoidance of known TCPs and handling procedures for the discovery of cultural resources, as well as cultural resources worker awareness training.

Section 3.14 Old Spanish National Historic Trail

Page 3-141 is revised as follows:

The Proposed Action includes the removal of all landscape vegetation within the development areas (~~totally~~ totaling 7,100 acres [2,873 hectares]), and disking and rolling of the land, which would substantially alter the underlying landscape and the overall setting of the valley.

Page 3-141 is revised as follows:

The Applicant consulted with the Old Spanish Trail Association (OSTA) to understand their concerns with the Project. While any development in the valley could be considered substantial interference with the nature, purpose, and primary uses of the OSNHT, the OSTA is most interested in preserving the history and expanding the educational opportunities for use of the trail across the greater region. The Applicant has defined voluntary compensatory mitigation (MM NHT-1) in coordination and consultation with the OSTA. The mitigation does not reduce adverse effects as it does not preserve the setting along the trail.

Page 3-142 is revised as follows:

Historic Resources. The Class I inventory for cultural resources resulted in the identification of one previously recorded cultural resource associated with the OSNHT on BLM land, a

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~~recommended~~ non-contributing segment of the Old Spanish Trail/Mormon Wagon Road to the west of I-15 near Crystal Substation (Knight & Leavitt Associates 2019). The results of the Class III cultural resources survey indicated that the non-contributing segment of the Old Spanish Trail/Mormon Wagon Road was destroyed in the area where it had been previously recorded, likely during construction of the Crystal Substation. The BLM is seeking concurrence with the SHPO on the finding that the segment is a non-contributing element. The Project would not have impacts on this resource as it is ~~recommended~~-ineligible for listing in the NRHP.

Page 3-144 is revised as follows:

The Proposed Action would have an adverse effect on the historic setting of the OSNHT across the valley through introduction of the solar facility on approximately 7,100 acres (2,873 hectares) of undeveloped land. The characteristics of historic landscape, including views to the mountains, hydrology, land contours, and native vegetation, would all be altered by the Proposed Action. MM NHT-1 requires documentation methods including on-site imagery to facilitate the creation of an interpretive “virtual” tour of the California Crossing HPRSEG using the latest technology. The measure also requires production of other interpretive media that creates a literary vicarious experience such as digital media, novel, graphic novel, short story, or picture book. The intent is to capture the current conditions before the Project is built in order for the site to be preserved digitally. These measures would not reduce the real-world physical impacts but would help to reduce impacts associated with the loss of the historical context of the area and the California Crossing HPRSEG.

Page 3-149 is revised as follows:

Historic and Cultural Setting. Impacts to the historic and cultural setting under the All Mowing Alternative would be adverse; however, some elements of the setting would be maintained under this alternative, as opposed to the Proposed Action under which all elements would be removed. While elements such as natural washes, vegetation, and wildlife could be retained under this alternative, the panels would cover the views of these landscape elements, substantially interfering with a viewer’s experience. Table 3.14-1 summarizes the impacts of the All Mowing Alternative on the OSNHT’s contributing features. MM NHT-1 would be implemented under this alternative to document the historical and cultural setting and reduce some impacts. Impacts to the historic and cultural setting of the OSNHT would still be adverse.

Page 3-151 is revised as follows:

MM VG-2 requires the use of drive and crush instead of disk and roll in a portion of the traditional development area, which would reduce impacts to soils, native vegetation, and hydrology, similar to the All Mowing Alternative. This mitigation measures could allow much of the site to be completely restored after decommissioning, similar to the All Mowing Alternative. It would allow for the BLM to manage the trail resources, qualities, values, and associated natural components of the settings within the solar development areas by maintaining native vegetation on site, minimized ground disturbance, avoiding any known or discovered archaeological segments of the trail (and potentially making them available to the public through the MOA and HPTP process under Section 106), and intensively treating weeds across most of the Project site. The access and enjoyment of the entire corridor, like for the All Mowing Alternative, would still be impacted for the 30 years.

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The Applicant-proposed mitigation (MM ~~NST-NHT~~-1) would apply to this alternative but would not reduce adverse effects as it does not preserve the setting along the trail.

Page 3-151 is revised as follows:

Historic and Cultural Setting. Impacts to the historic and cultural setting under the Hybrid Alternative would be adverse, but some elements of the setting would be maintained under this alternative where the site is mowed, compared with the Proposed Action where all elements would be removed. While elements such as the natural washes, vegetation, and wildlife could be retained on 65 percent of the solar development areas in this alternative, the panels would cover the views of these landscape elements, substantially interfering with a viewer's experience. MM NHT-1 would be implemented under this alternative to document the historical and cultural setting and reduce some impacts. Impacts to the historic and cultural setting of the OSNHT would still be adverse.

Page 3-152 is revised as follows:

Decommissioning

Decommissioning would involve the removal of the facility and the restoration of the area. The Hybrid Alternative would involve construction of the facility using traditional methods over approximately 35 percent of the facility and mowing over 65 percent of the facility. Vegetation, hydrology, soils, and topography would remain in place during construction and throughout Project operation within 65 percent of the site (including where the one segment of the trail was identified). While 65 percent of the site could be restored to pre-Project conditions quickly, the remaining 35 percent could take over a century or longer to be naturally recovered. MM VG-2 requires that the 35-percent portions of the site constructed by disk and roll be constructed by drive and crush, preserving the native vegetation roots, soils, and washes. This measure would reduce the area of disk and roll by 18 percent. Over 30 years, this alternative would be similar to the All Mowing Alternative in the areas of mowing, and drive and crush. Similar to the Proposed Action, the areas developed with traditional methods are not expected to ever fully recover to pre-disturbance conditions. MM NHT-2 requires that the remaining areas developed using traditional methods be designed in a manner to allow restoration and regrowth of vegetation throughout operation. The measure requires the specifications of the Site Restoration Plan to be applied to the areas of traditional development and that restoration of these areas begin following the end of construction, allowing these areas more time to be restored prior to decommissioning. Impacts on the setting, feel, and association of the Congressionally-designated OSNHT corridor and the NRHP-eligible contributing segment of the Old Spanish Trail could be restored across much of the Project site after decommissioning under this alternative, and s Substantial interference with the nature, purpose, and primary uses of the trail could remain in the areas of traditional development, following reclamation ~~would no longer occur.~~

Residual Effects

Residual effects would be the same as those stated for the Proposed Action. The Hybrid Alternative reduces some effects associated with natural landscape resources important to the trail's setting but would still be adverse due to the presence of the solar field structures in the OSNHT corridor, as the corridor encompasses the entire Project area. With MM VG-2, the residual effects from substantial interference with the nature, purpose, and primary uses of the

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trail would be reduced for much of the Project site, and last approximately 35 years (30 year of the ROW and then approximately 5 years thereafter for restoration). Substantial interference with the setting of the OSNHT corridor would be minimal due to implementation of MM NHT-2 but could remain in areas of traditional development.

Page 3-153 is revised as follows:

- MM NHT-1: Contribution to the Old Spanish Trail Association and Documentation of the OSNHT (from Section 3.14: Old Spanish National Historic Trail)
- MM NHT-2: Restoration of Traditional Development Areas – Hybrid Alternative (from Section 3.14: Old Spanish National Historic Trail)

Section 3.15 Socioeconomics and Environmental Justice

Page 3-158 is revised as follows:

Cumulative Effects

Socioeconomics. Many of the cumulative projects in Clark County could be constructed simultaneously (#1, #7, #8 through #17, #19 through #22, #30 from Table 3.0-2), requiring a large construction workforce. A small workforce would be needed to operate some of the cumulative projects, primarily the energy projects.

Page 3-158 is revised as follows:

The employment and economics benefits during construction of the All Mowing Alternative would create more employment opportunities and marginally more economic output than the Proposed Action.

Section 3.16 Transportation

Page 3-161 is revised as follows:

Heavy construction equipment would be moved on site at the beginning of construction and would remain throughout construction, as needed. These trips are accounted for as part of the delivery truck trips. Daily vehicle traffic would be primarily composed of workers' passenger cars/light trucks, worker shuttles, delivery trucks, dump trucks, water trucks, waste hauling trucks, concrete trucks, and portable toilet trucks. The highest number of trips would be from construction workers traveling to and from the site each day. The Project includes an option to truck construction water to the Project site, which would increase the number of ~~one-way trips~~ trucks accessing the Project site by 179 96 per day (72 peak hour trips), assuming the use of 4,000-gallon water trucks and a 2.5-year construction schedule.

Page 3-162 is revised as follows:

Traffic Hazards. The Project would generate a significant number of workers, delivery, and construction vehicle trips throughout construction. Construction traffic, such as large delivery trucks traveling at low speeds or with extra wide loads, could cause a substantial hazard to other roadway users, particularly along Valley of Fire Road. Tribal events and pow wows occur on occasion at the outdoor event space located near the travel plaza and just to the south of Valley of

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Fire Road. Construction traffic could result in hazards to tribal uses of the event space. A Traffic and Transportation Plan is required. MM TRA-1 requires the Traffic and Transportation Plan to specify traffic control measures, such as flaggers, escort vehicles, and signage to minimize conflicts and hazards. Implementation of MM TRA-1 would minimize effects of traffic hazards associated with construction. The Traffic and Transportation Plan would also include provisions to coordinate with the Moapa River Indian Tribe to obtain a schedule of events and to coordinate construction during events to reduce conflicts and hazards from traffic.

Table 3.16-1 on page 3-162 is revised as follows:

Table 3.16-1 Peak Hour and Daily Roadway Operation with Peak Construction Trips (For the Water Trucking Option)

Roadway	Location	Existing Volume	Peak Construction Volume	Existing plus Construction Volume	Hourly/Daily	LOS C Capacity	Volume Less Than Capacity?
I-15	3.2 miles (5 kilometers) north of US 93	25,600	3,186 2,910	28,786 28,510	Daily	48,100	Yes
I-15	1.5 miles (2.4 kilometers) north of SR 604	30,000	3,186 2,910	33,186 32,910	Daily	48,100	Yes
Valley of Fire Road	4.8 miles (7.7 kilometers) south of I-15	570	3,186 2,910	3,756 3,480	Daily	5,100	Yes
I-15 NB Off-Ramp	Valley of Fire Road	123	282 226	405 349	Hourly	1,440	Yes
I-15 NB On-Ramp	Valley of Fire Road	85	282 226	367 311	Hourly	1,440	Yes
I-15 SB Off-Ramp	Valley of Fire Road	71	282 226	353 297	Hourly	1,440	Yes
I-15 SB On-Ramp	Valley of Fire Road	152	282 226	434 378	Hourly	1,440	Yes

Page 3-163 is revised as follows:

Cumulative Effects

Many of the nearby cumulative projects could feasibly be constructed simultaneously, but not all projects would contribute vehicle trips to the same roadways as the Proposed Action.

Construction is complete for many of these projects or they would not contribute trips on the analysis area roadways due to their location. ~~Seven~~ Eight of the cumulative projects (#1, #7, #8, #9, #12, #19, ~~and #21, and #30~~) from Table 3.0-2) are planned to be under construction at the same time as the Project and would contribute trips to I-15 within the analysis area.

Tables 3.16-2 and 3.16-3 on page 3-165 are revised as follows:

Table 3.16-2 Cumulative Projects Construction Trip Generation

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Cumulative Project	Daily Trips	Daily Trips (PCE)
Harry Allen Solar Energy Center Project (#1)	550	650
Arrow Canyon Solar Project (Formerly known as the Moapa Solar Energy Center (#7)]	700	800
Dry Lake Solar Energy Center Project (#8)	500	600
Dry Lake Solar Energy Center at Harry Allen (#9)	500	600
Southern Bighorn Solar and Storage Center (#30) ¹	1,050	1,200
Eagle Shadow Mountain Project (#12) ¹	1,050	1,200
Harry Allen to Eldorado 500kV Transmission Line Project (#19) ²	250	375
TransWest Express Transmission Project (#21)	250	375 ³
Total	3,800 4,850	4,600 5,800
Notes: 1. Calculated using a ratio of the workers to size of Moapa Solar Energy Center. 2. Assumes a similar number of trips as the TransWest Express Transmission Project. 3. Assumes that half of the trips are truck trips.		

Source: (BIA 2013, BLM 2013, BLM 2014b, BLM 2015a)

Table 3.16-3 Cumulative and Cumulative plus Peak Construction Trips

Roadway	Location	Cumulative Daily Trips	Cumulative Plus Project Daily Trips	Cumulative Volume	Hourly/Daily	LOS C Capacity	Volume Less Than Capacity?
I-15	3.2 miles (5.1 kilometers) north of US 93	3,950 5,150	6,476 8,336	32,076 33,936	Daily	48,100	Yes
I-15	1.5 miles (2.4 kilometers) north of SR 604	4,600 5,800	7,126 8,986	37,126 38,986	Daily	48,100	Yes

Section 3.17 Public Health and Safety

Page 3-170 is revised as follows:

The Project would require the development of four 1-acre (0.4-hectare) water storage ponds during construction, which ~~if used instead of tanks~~ could increase the risk of mosquito breeding and consequently the risk of West Nile virus and Zika.

Page 3-171 is revised as follows:

MM AQ-1 requires the ~~development and implementation of a~~ incorporation of several fugitive dust control measures into the required Dust Control and Air Quality Plan, which would reduce fugitive dust and minimize the risk to workers of contracting valley fever.

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Chapter 4 Consultations, Coordination, and Public Involvement

Page 4-1 is revised as follows:

A *Scoping Report* was prepared to summarize the comments addressed (Panorama Environmental, Inc. 2018). The BLM also sent letters in September 2017 to invite agencies to become cooperating agencies. The BLM has coordinated and continues to coordinate with the Co-Administrators of the Old Spanish Trail. The cooperating agencies include BLM, USACE, USEPA, DoD, USFWS, Nevada Department of Wildlife, Nevada Division of Forestry, and Clark County. The NPS is a participating agency.

4.3 Formal Consultation with Tribal Governments

The BLM conducted government-to-government consultations over several months, pursuant to Section 106 of the NHPA, expanding on larger efforts undertaken by BLM to consult on renewable energy projects in southern Nevada. Consultation letters were distributed to the tribes requesting their respective input on the Project. The BLM traveled to and consulted with the following tribes: Moapa Band of Paiutes, Las Vegas Paiute Tribe, Fort Mojave Tribe, Twenty-Nine Palms Band of Mission Indians, Chemehuevi Indian Tribe, Bishop Paiute Tribe, Colorado River Indian Tribes, and Timbisha Shoshone Tribe. Most tribes deferred to the Moapa Band of Paiutes for identifying issues and concerns about the Gemini Solar Project. The tribe's concerns have involved BLM coordination with the tribe, including the hiring of a tribal liaison from the Moapa Band of Paiutes. The Twenty-Nine Palm Band of Mission Indians stated that the Gemini Solar Project was located on the edge of their historic use area.

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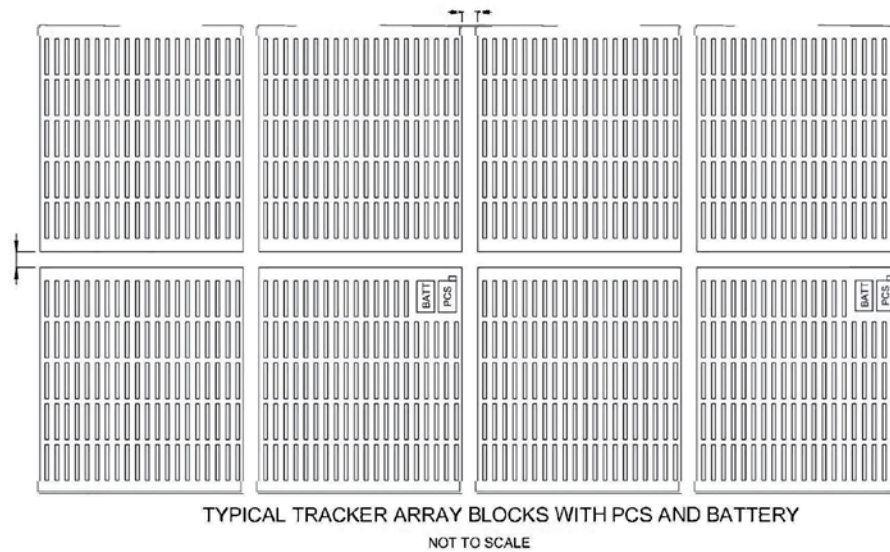
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Appendix D Figures

The following figures are added to Appendix D.

Figure 2-6 is replaced as follows:

Figure 2-6 Typical Section of an Array Block

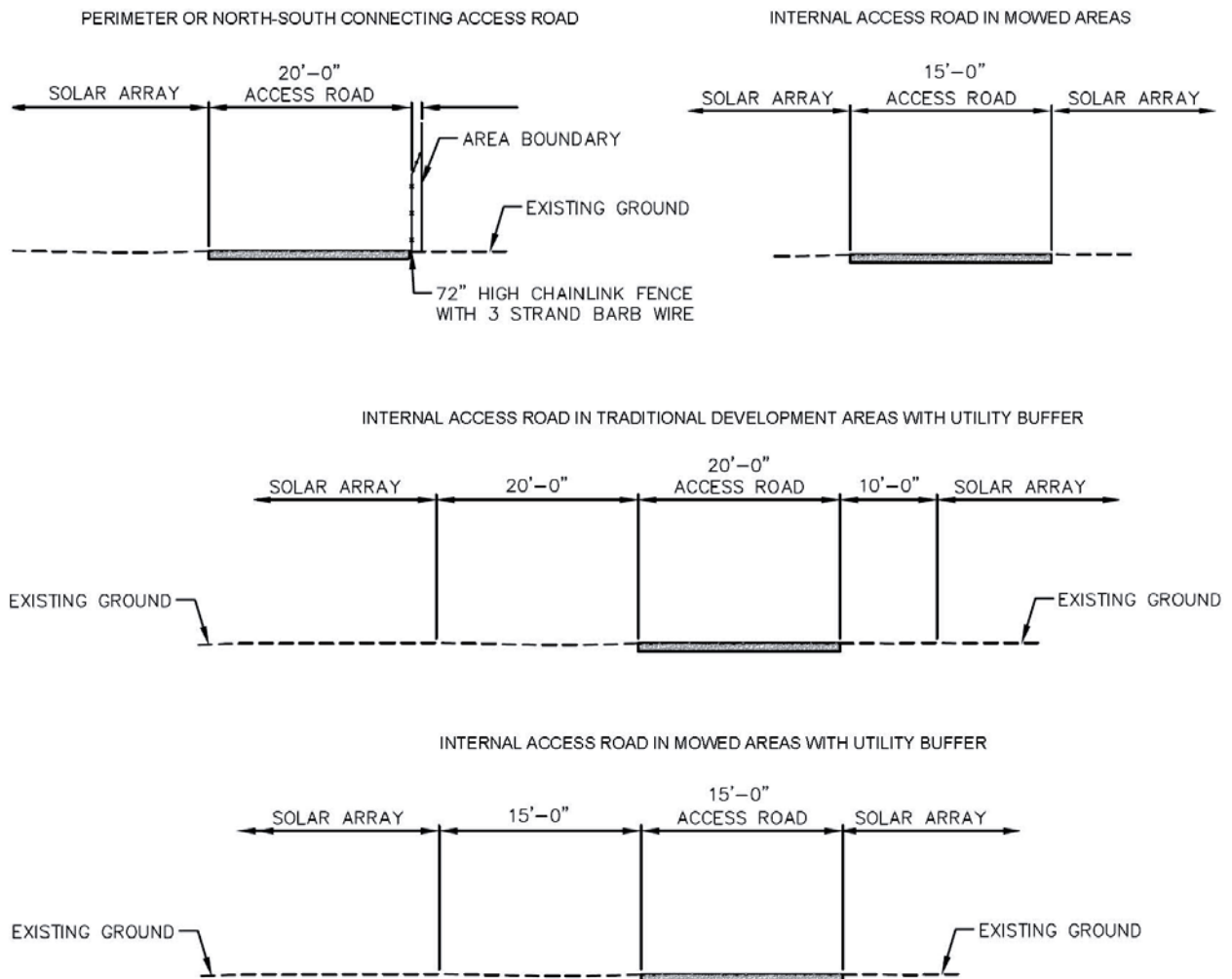


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Figure 2-12 is replaced as follows:

Figure 2-12 Cross Section of Typical Roads



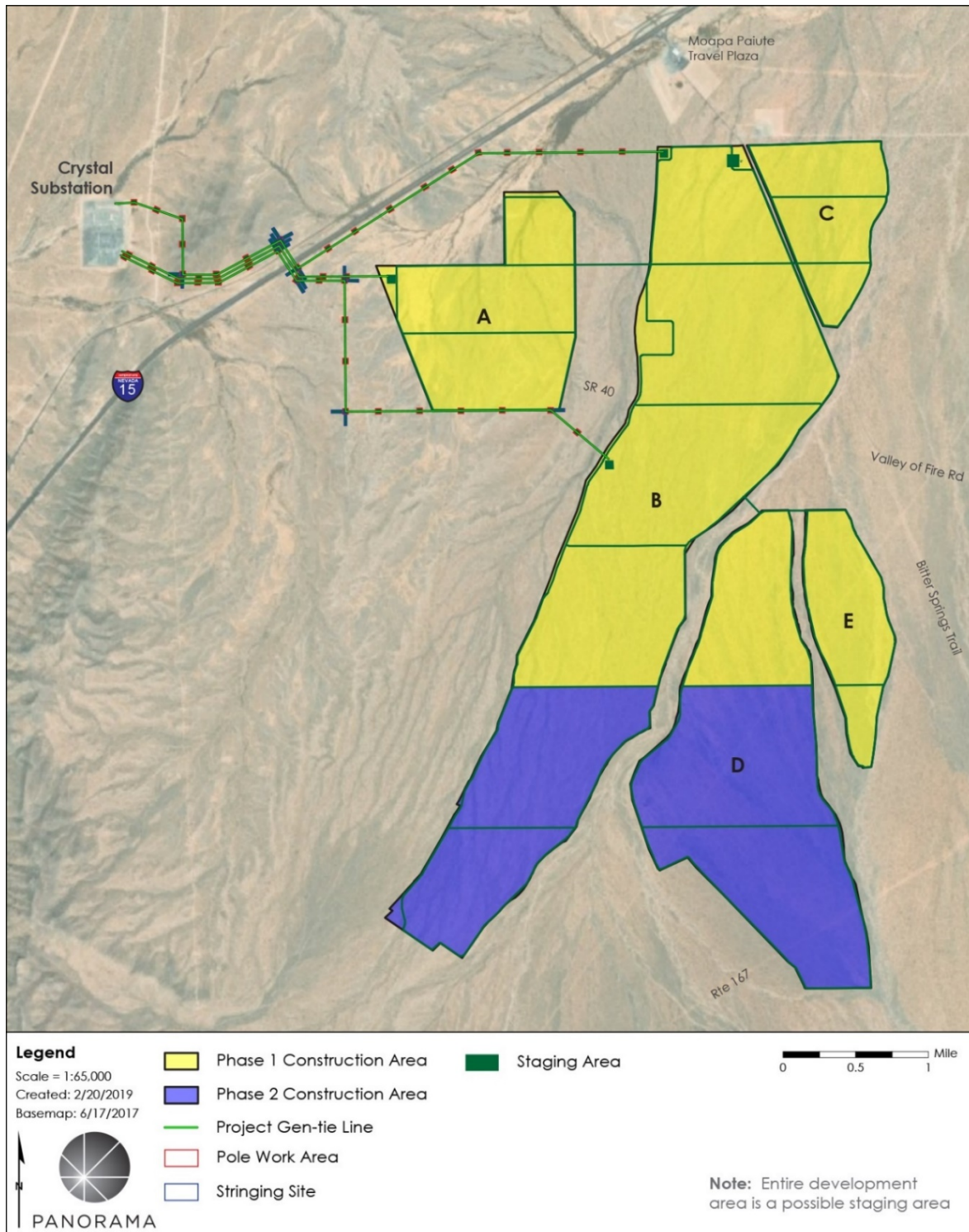
Source: (Solar Partner XI, LLC. 2018)

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Figure 2-18 is replaced as follows:

Figure 2-18 Proposed Action Construction Phasing and Staging Areas



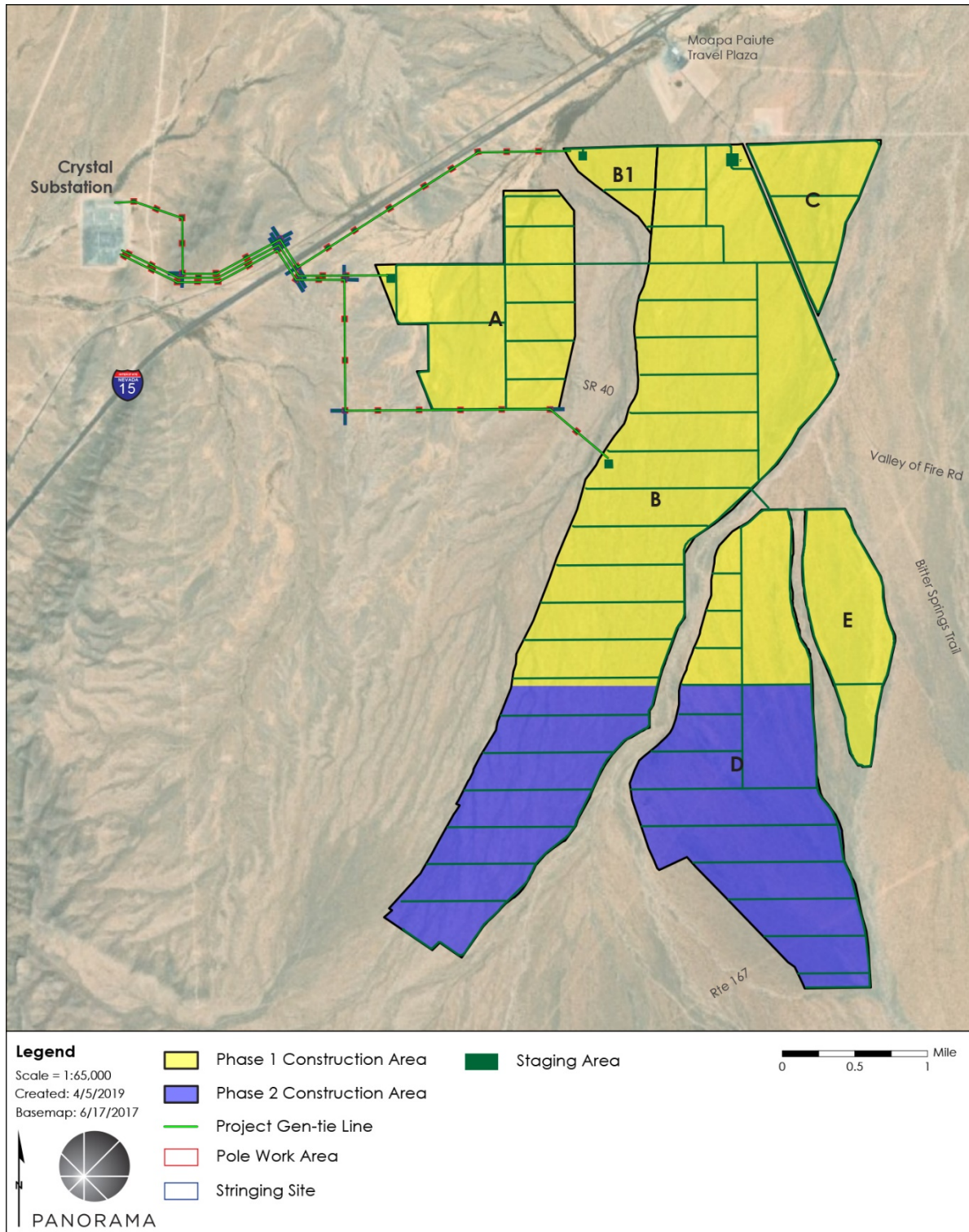
Sources: (Louis Berger 2018, USDA-FSA-APFO 2017, Clark County 2018)

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Figure 2-20 is replaced as follows:

Figure 2-20 All Mowing Alternative Construction Phasing and Staging Areas



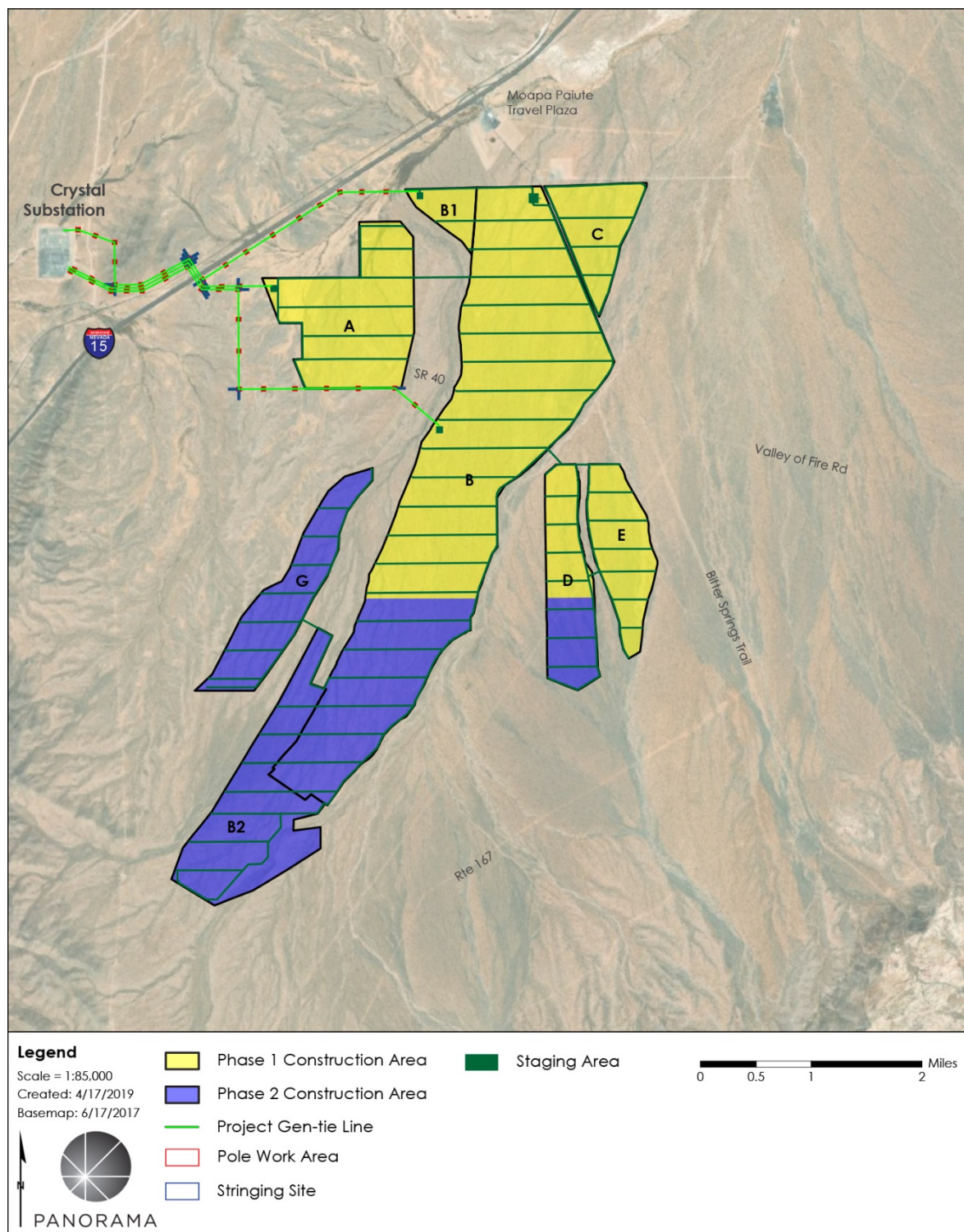
Sources: (Louis Berger 2018, USDA-FSA-APFO 2017, Clark County 2018)

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Figure 2-23 is replaced as follows:

Figure 2-23 Hybrid Alternative Construction Phasing and Staging Areas



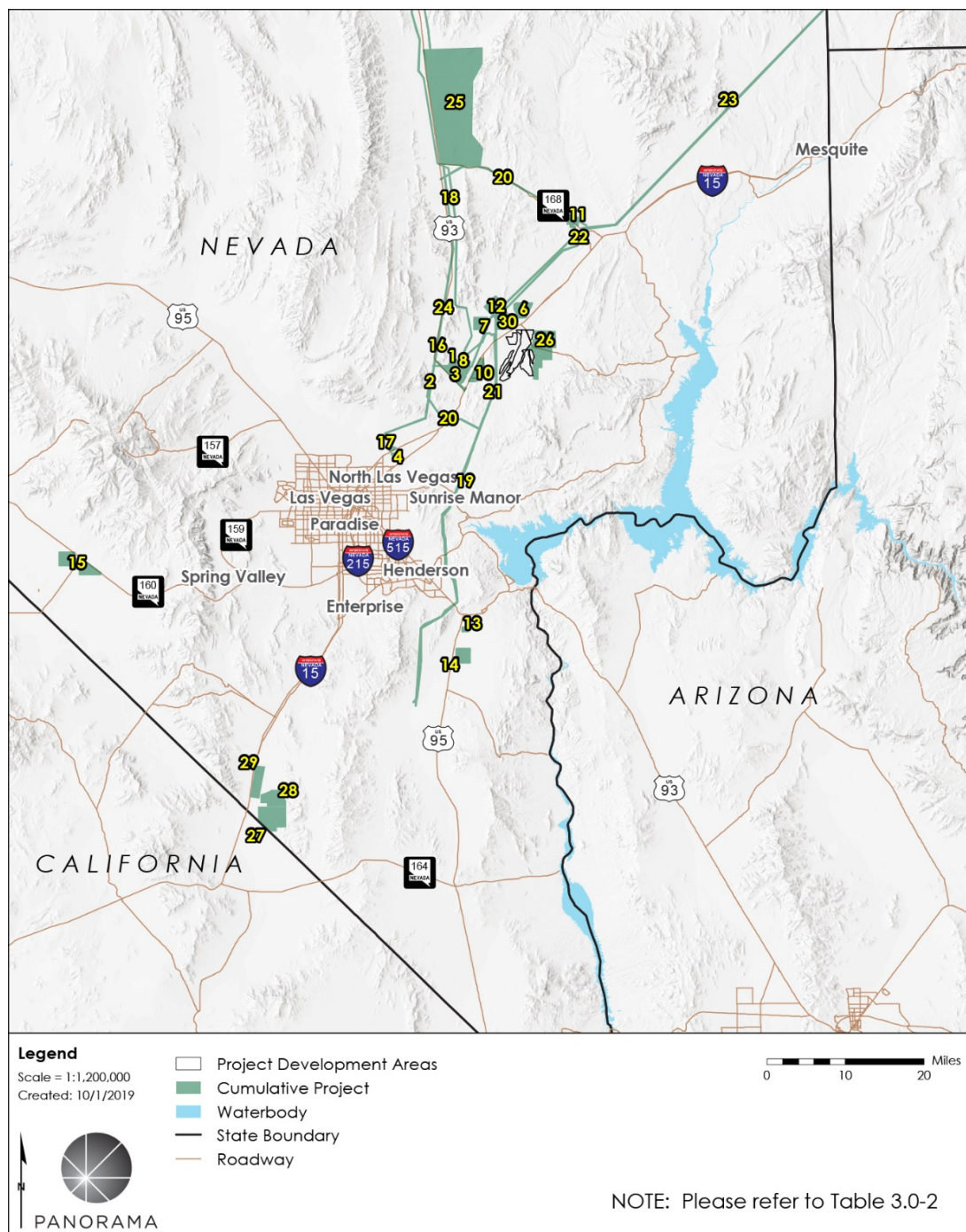
Sources: (Louis Berger 2018, USDA-FSA-APFO 2017, Clark County 2018)

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Figure 3.0-1 is replaced as follows:

Figure 3.0-1 Cumulative Projects in Study Area



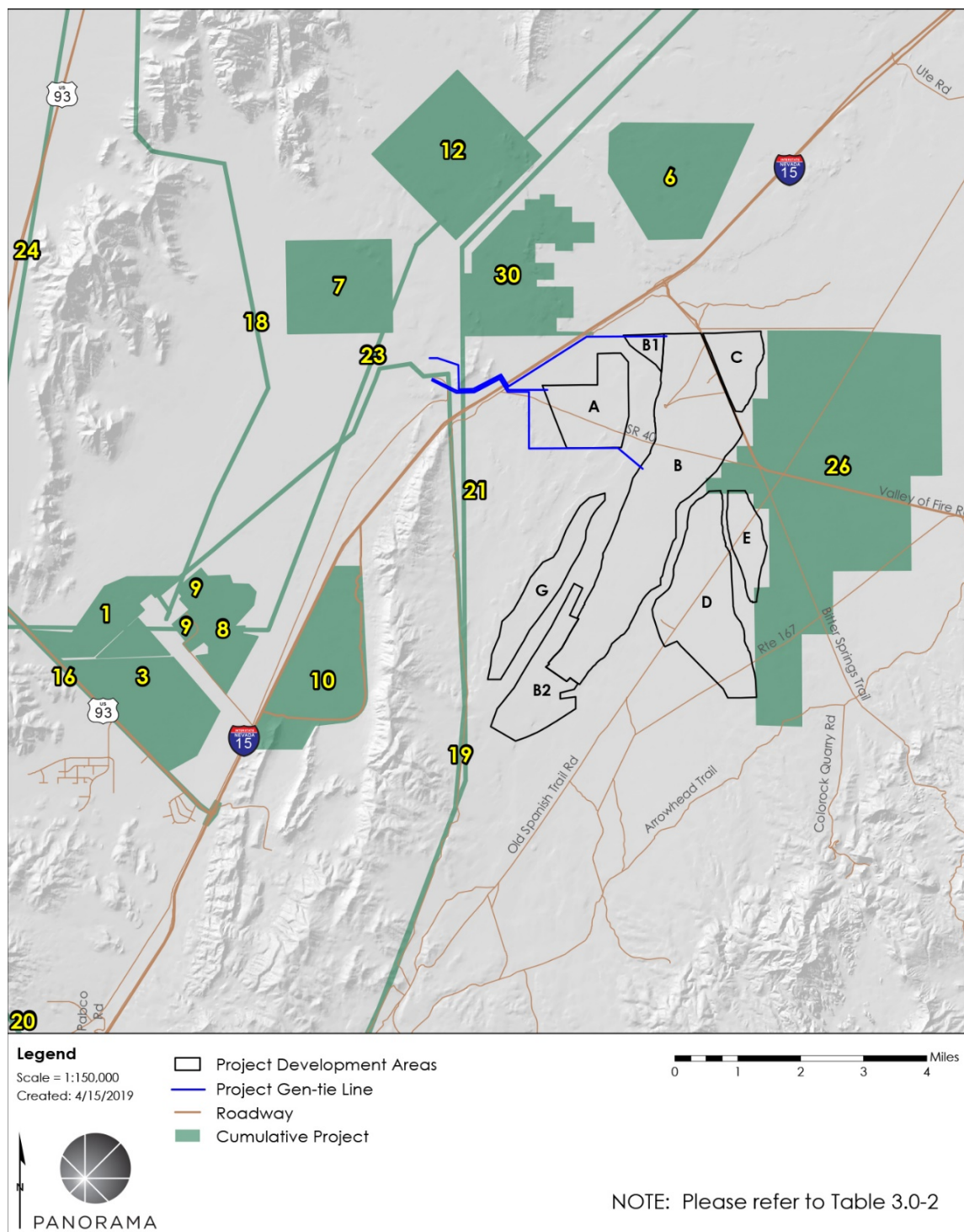
Sources: (Esri 2006, USGS 2017, The National Map and USGS 2017, Ventyx 2010, Tele Atlas 2010a, Tele Atlas 2010b, Louis Berger Group 2018)

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Figure 3.0-2 is replaced as follows:

Figure 3.0-2 Local Cumulative Projects in the Project Area



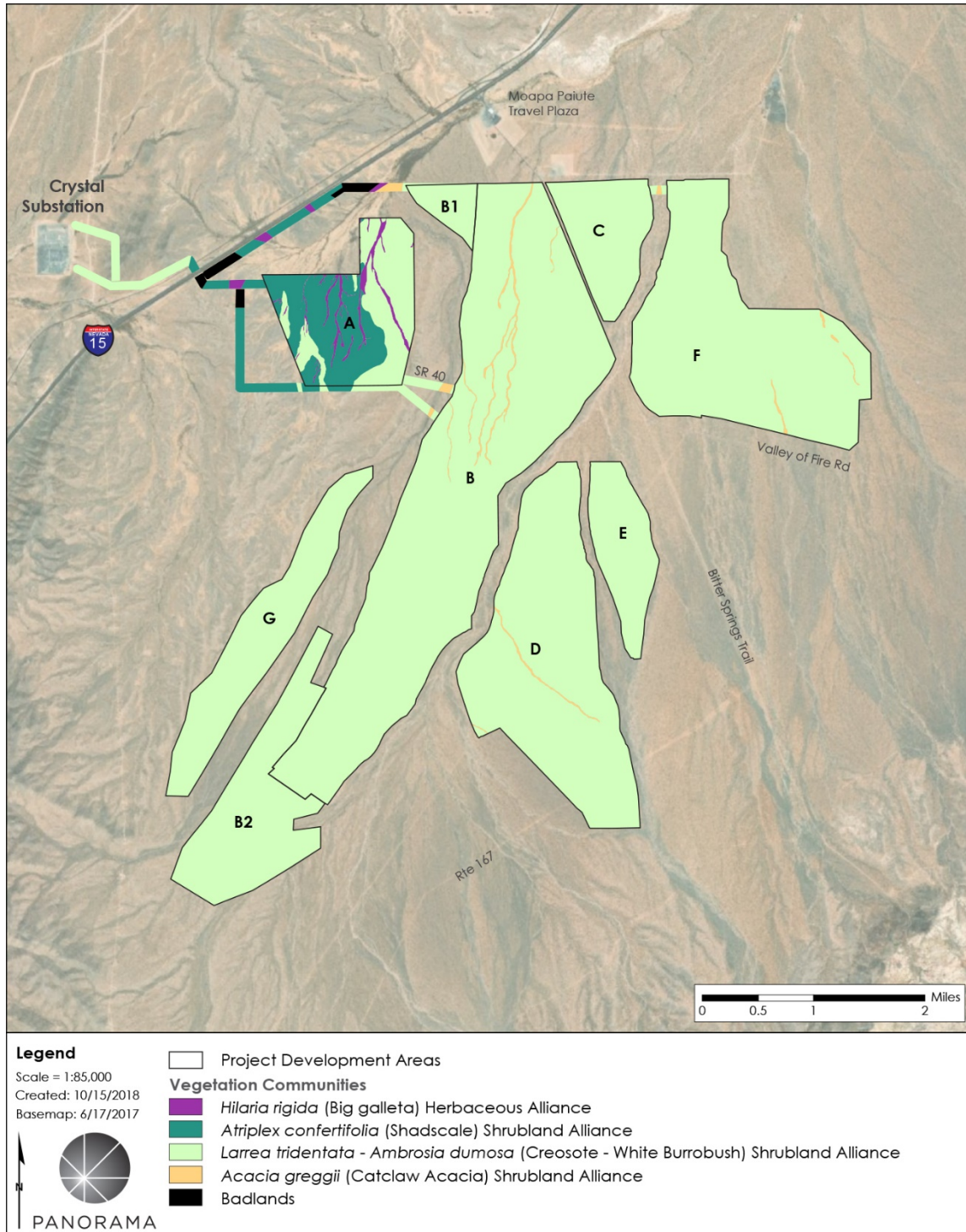
Sources: (Esri 2006, USGS 2017, The National Map and USGS 2017, Ventyx 2010, Tele Atlas 2010a, Tele Atlas 2010b, Louis Berger Group 2018)

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Figure 3.6-11 is replaced as follows:

Figure 3.6-11 Vegetation Communities in the Project Area



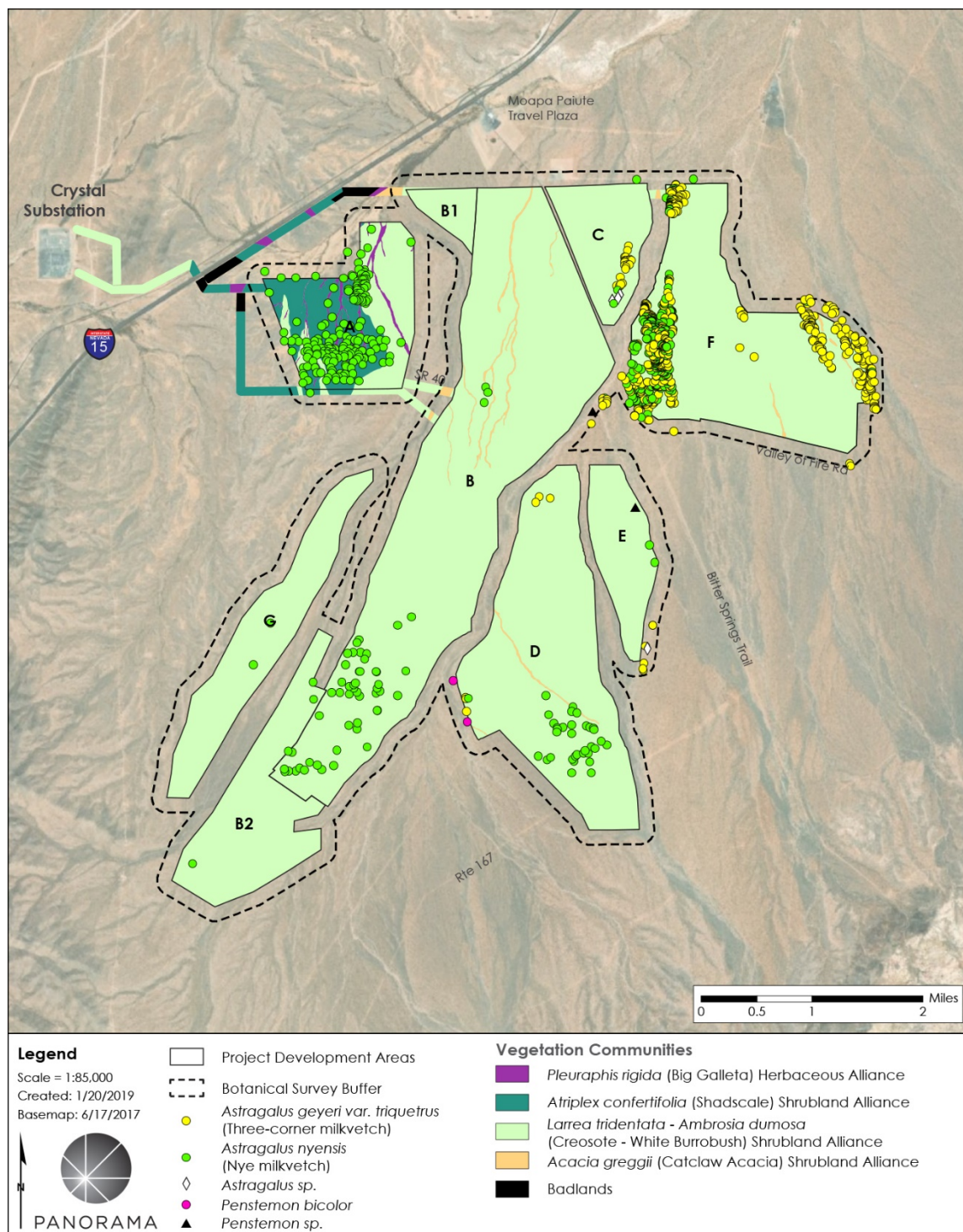
Sources: (Louis Berger Group 2018, USDA-FSA-APFO 2017, Clark County 2018, Phoenix Biological Consulting, Inc. 2018g)

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Figure 3.6-17 is replaced as follows:

Figure 3.6-17 General Locations and Densities of Rare Plants Found During Surveys



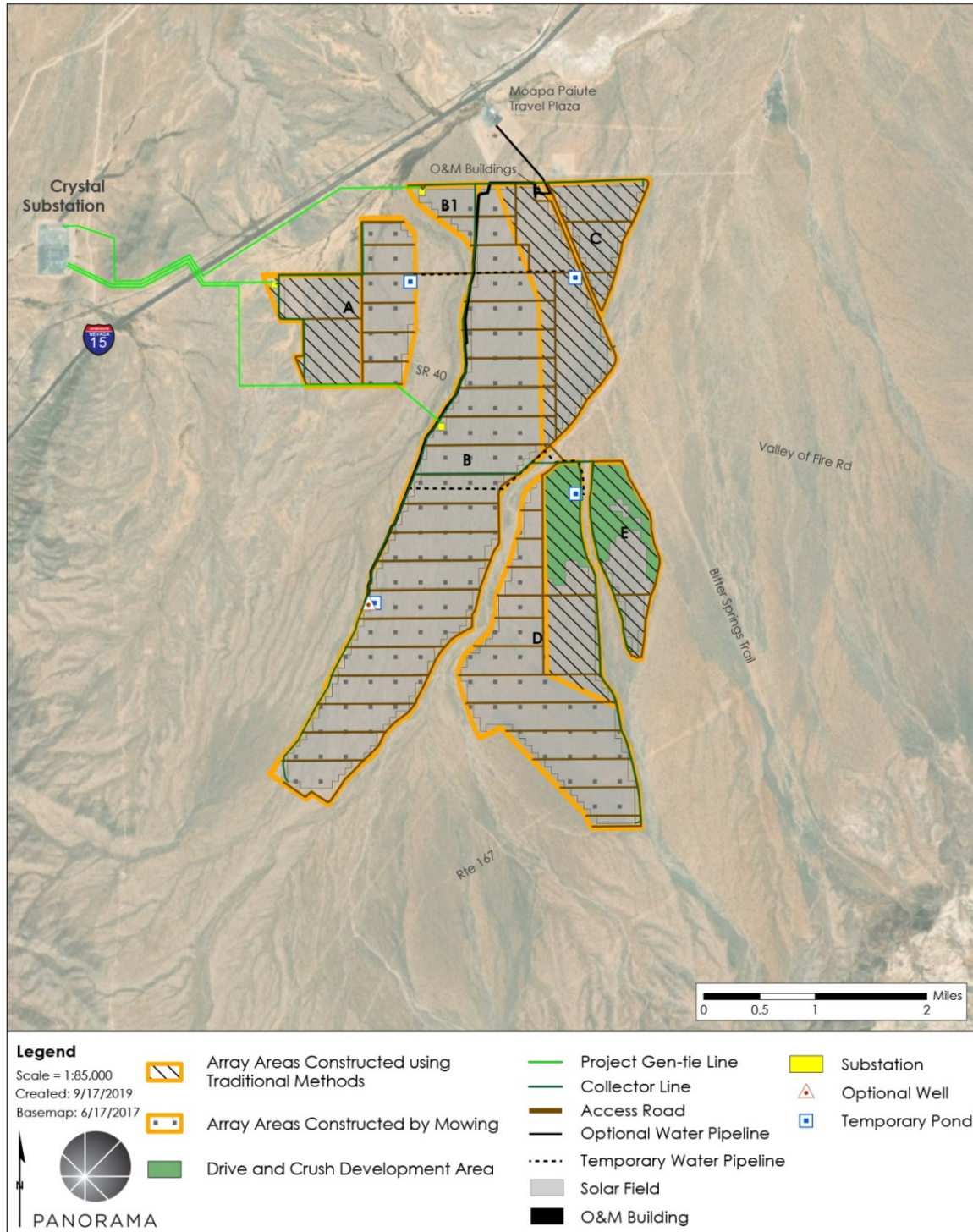
Source: (Louis Berger Group 2018, USDA-FSA-APFO 2017, Clark County 2018, Phoenix Biological Consulting, Inc. 2018g, Phoenix Biological Consulting, Inc. 2018f)

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Figure 3.6-21 is added as follows:

Figure 3.6-21 Areas of Drive and Crush in Traditional Development Areas as Required Under MM VG-2



Sources: (Louis Berger 2018, USDA-FSA-APFO 2017, Clark County 2018, Hamilton and Kokos 2011)

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Appendix H Mitigation, Monitoring, Reporting Measures

Appendix H is revised as follows:

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<p>MM LU-1: Coordination with Transmission Line ROW Holders/Applicants</p> <p>The Applicant shall coordinate with transmission line right-of-way (ROW) holders/applicants (e.g., TransWest Express, LLC, Los Angeles Department of Water and Power, NV Energy) to identify potential conflicts between applicable transmission line and Project generation tie (gen-tie) lines. The Applicant shall incorporate gen-tie facility adjustments into final design and engineering plans to avoid any conflicts, such as adjusting the locations or heights of conductor and support structures including towers, and shall schedule construction activities with the appropriate ROW holder/applicant (e.g., TransWest Express, LLC, NV Energy, and LS Power) in overlapping ROW areas to minimize disruption of construction activities.</p>	Section 3.1	Gen-tie routes	Coordinate with transmission line owners/applicants	Applicant	Cooperative Engineering Agreement Final Engineering Design	Prior to construction	Verified by: Date:
<p>MM LU-2: Coordination with CenturyLink</p> <p>Prior to construction within the ROW, the Applicant shall coordinate with CenturyLink to identify the location of any underground cables to ensure the cables are not inadvertently damaged during construction of the gen-tie lines.</p>	Section 3.1	The northern gen-tie route parallel to Interstate 15 (I-15)	Coordinate with CenturyLink	Applicant	None	Prior to construction	Verified by: Date:
<p>MM REC-1: Old Spanish Trail Road and Route 167 Reroute</p> <p>Old Spanish Trail Road shall be rerouted south of development area D, utilizing the California Wash, Arrowhead Trail, or Route 167 up to where those routes meet Valley of Fire Road. The Applicant shall provide Bureau of Land Management (BLM)-approved signage at Old Spanish Trail Road and Route 167 indicating the detour for recreational access (non-off-highway vehicle [OHV]), which is primarily to California Wash or the Arrowhead Trail.</p>	Sections 3.2 and 3.14	Old Spanish Trail Road at intersections with California Wash, Arrowhead Trail, and Route 167	Post signage	Applicant	None	Prior to construction	Verified by: Date:
<p>MM GS-1: Operation and Maintenance Erosion Control</p> <p>The following methods shall be implemented to minimize effects on Project infrastructure from on-site erosion prior to and during Project operation:</p> <ul style="list-style-type: none">During final Project design, the Applicant’s engineer shall assess the need for erosion control and bank stabilization devices to be installed in and around on-site and off-site <u>Project area</u> washes and include recommended stabilization in the final design to be submitted to the BLM, prior to issuance of the Notice to Proceed (NTP). Devices could include riprap lining of wash banks to direct flows and protect banks. The Applicant shall obtain appropriate permits, as needed.The facility operator shall perform routine site inspections to identify and repair areas of erosion, such as deep rills and gullies in the panel arrays and along the gen-tie access routes, and shall maintain, change, or add additional erosion control features if needed (in accordance with required permits).	Sections 3.3, 3.5, 3.6, and 3.12	All Project areas	Install erosion control devices Inspect Project site for erosion	Contractor	Final Engineering Design Routine Inspection Reports	Prior to and during operation	Verified by: Date:

Mitigation, Monitoring, and Reporting Measures	EIS Section	Application Locations	Implementation Procedure or Action	Responsible Organization	Deliverable/ Report	Compliance Schedule	Verification of Compliance
<p><i>MM PR-1: Preparation and Implementation of a Paleontological Resources Monitoring and Mitigation Plan</i></p> <p>Prior to construction, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) shall be prepared by a qualified professional paleontologist and approved by the BLM. It shall be implemented during construction and operation and maintenance (O&M) of the Project. It shall include the following details:</p> <ul style="list-style-type: none">• A description of a worker training program. The worker environmental awareness plan (WEAP) training program shall be prepared and provided by a BLM-approved professional paleontologist. The WEAP training shall focus on the recognition of the types of paleontological resources that could be encountered within the Project site, and the procedures to be followed if scientifically significant fossils are discovered. The WEAP training shall be reviewed and approved by the BLM prior to the issuance of a Notice to Proceed.• Detailed procedures for monitoring during construction. Based on the results of the field survey and in accordance with the BLM’s paleontological resource management policies, monitoring by a BLM-approved professional paleontologist shall occur in all areas where excavations have a moderate potential to disturb paleontological resources (i.e., are with a Potential Fossil Yield Classification [PFYC] 3). Areas of unknown paleontological potential (PFYC U) shall be initially monitored to determine their thicknesses and to better refine their paleontological classification. If these geologic units are determined to have a low paleontological potential (PFYC 2), then the level of paleontological mitigation and monitoring can be reduced at the discretion of the qualified professional paleontologist in cooperation with the BLM. Areas mapped as Holocene-age young alluvium (Qa) and artificial fill (af), which have low paleontological potential (PFYC 2), shall be spot-checked during excavations that exceed depths of 3 feet (0.9 meter) to check for underlying, paleontologically sensitive geologic deposits. If older, native deposits are observed, full-time monitoring shall be implemented in those areas. If it is determined that only PFYC 2 areas (i.e., Holocene-age alluvium or artificial fill) would be affected, the monitoring program at these areas shall be reduced or suspended.• Fossil discovery. Upon discovery of fossils, work shall be halted at the fossil site until the qualified paleontologist can determine the significance of the find and, if significant, make site-specific recommendations for collection or other resource protection. The area of the discovery shall be protected to ensure that the fossils are not removed, handled, altered, or damaged until the site is properly evaluated and further action determined.• Fossil recovery, laboratory analysis, and museum curation. All scientifically significant fossils salvaged during construction monitoring shall be prepared to the point of curation, identified to the element and the lowest taxonomic level, and transferred to the Las Vegas Natural History Museum or other accredited repository for which a curation agreement was obtained, for permanent storage. A curation agreement with Las Vegas National History Museum or another accredited repository approved by BLM Southern Nevada District Office shall be obtained prior to the start of construction.	Section 3.4	All Project areas	Prepare and implement a PRMMP Obtain curation agreements	Qualified professional paleontologist BLM Contractor	PRMMP Curation agreements Monitoring reports	Prepare PRMMP and obtain curation agreement prior to construction Implement PRMMP during construction	Verified by: Date:

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<p><i>MM PR-2: Known Fossil Collection</i> Prior to construction, the potentially significant vertebrate ear bone fragment from an area mapped as intermediate-age sidestream alluvium shall be collected. Collection shall follow the procedures outlined in the PRMMP.</p>	Section 3.4	Location of potentially significant vertebrate ear bone fragment	Collect potentially significant vertebrate ear bone fragment and curate	Qualified professional paleontologist	Report on collection and curation	Prior to construction	Verified by: Date:
<p><i>MM WR-1: Elevation of Solar Facilities in Floodplain Areas, Avoidance of Jurisdictional Drainages</i> During final engineering design, the site hydrology shall be remodeled, considering the final configuration of solar development areas, solar features, and areas constructed via mowing versus traditional methods of development (under the Hybrid Alternative or All Mowing Alternative). Based on the outcome of the remodeling, solar panels and electrical equipment shall be elevated above the 100-year flood depth in the affected areas of development areas B and C, and foundations shall be designed to withstand scour.</p> <p><u>At the request of FEMA or Clark County, the Applicant shall conduct modeling for the 500-year flood plain.</u></p> <p>The placement of fill material in jurisdictional drainages shall be allowed as necessary, with appropriate permits from the United States Army Corps of Engineers (USACE), in drainage crossings for access road and utility trench construction, for solar facility posts, and for the installation of drainage facilities and bank stabilization measures. All other fill of jurisdictional drainages shall be avoided unless a justifiable reason is provided in the final engineering drawings submitted to the BLM <u>and Clark County</u> for approval and issuance of an NTP. If drainages need to be filled and rerouted, such as for traditional methods of construction in the lower part of development area D where jurisdictional drainages are extensive, justification for the fill and rerouting must be provided in the final engineering drawings subject to BLM <u>and Clark County</u> (and USACE) approval. Drainages shall not be filled and rerouted in the traditional development areas of the Hybrid Alternative. Under the Hybrid and All Mowing Alternatives, fill of jurisdictional drainages shall only be allowed where needed for access road and utility trench construction, for solar facility posts, and for drainage facilities and bank stabilization, and other rare and justifiable circumstances. Gen-tie access roads shall be constructed to avoid the placement of fill in jurisdictional washes, unless unavoidable.</p> <p>During site preparation, jurisdictional drainages to be avoided in areas of traditional development shall be flagged or fenced at their top-off bank to ensure that when vegetation is removed during disking and rolling, no material is filled into these drainages. Flagging shall be removed after site preparation.</p>	Sections 3.5 and 3.6	All Project areas	Remodel site hydrology	Qualified hydrologist	Hydrology Remodel Report Final Engineering Design	Prior to construction	Verified by: Date:
<p><i>MM WR-2: Stormwater Quality Monitoring Program</i> A Stormwater Quality Monitoring Program shall be prepared and submitted to the BLM for approval. The program shall specify the testing procedures for stormwater quality, frequency, constituents tested, and reporting requirements, including the agencies to which the results must be reported. The program shall also include requirements for modifications in construction or operation methods if water quality impacts are detected. On-site ponds used for construction water shall be designed with appropriate freeboard and/or spillways and flow dissipation to ensure that water is held or properly discharged during a storm event, without causing excessive</p>	Section 3.5	All Project areas	Use BLM-approved dust palliatives Test stormwater quality periodically	Qualified hydrologist BLM	Stormwater Quality Monitoring Program Monitoring reports	During construction and operation	Verified by: Date:

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sedimentation. Only BLM-approved dust palliatives shall be used during Project construction and operation. The Stormwater Quality Monitoring Program shall also require periodic testing of stormwater quality to verify that water quality impacts are not occurring from use of the dust palliative. If water quality impacts are found during monitoring, the monitoring program shall require modification to the palliative use in consultation with the BLM, which could include installation of fencing, changes to the application rate of the palliative, or other means to minimize effects.							
MM WR-3: Groundwater Pumping Meter and Development of a Groundwater Monitoring and Reporting Plan A water flow meter shall be installed at the on-site well, if water is supplied via this source option, to monitor the quantity of groundwater pumped. The total quantity of groundwater pumped throughout the duration of construction shall not exceed 2,000 acre-feet (247 hectare-meters). Annual water usage during operation shall not exceed 20 acre-feet (2.5 hectare-meters). Annual reports logging the quantity of water pumped shall be retained at the O&M building and available upon agency request. A Groundwater Monitoring and Reporting Plan (GMRP) shall also be prepared for the Project. The GMRP shall provide the methods and requirements for documenting pre-construction baseline groundwater conditions, guiding groundwater monitoring and reporting, and documenting groundwater use. The GMRP shall include performance criteria for groundwater impacts and shall include provisions to reduce pumping, if needed.	Section 3.5	On-site well in development area B	Install water flow meter at the on-site well Develop GMRP	Contractor Qualified hydrologist	GRMP Monitoring reports	Prior to and during construction and operation	Verified by: Date:
MM VG-1: Requirements of the Site Restoration Plan and Integrated Weed Management Plan, and Decommissioning and Site Reclamation Plan The Site Restoration Plan and Integrated Weed Management Plan, and Decommissioning and Site Reclamation Plan shall include the following requirements, at a minimum: <ul style="list-style-type: none">• Vegetation<ul style="list-style-type: none">– For the Hybrid and All Mowing Alternatives, monitoring shall be addressed in a long-term monitoring plan. four long-term vegetation monitoring plots shall be set up within the Project area (three in developed areas and a fourth in a mowed, undeveloped area) to measure change and recovery in vegetation within the Project site. These test plots shall provide information about habitat recovery for the Mojave desert tortoise. Development of this monitoring shall be in coordination with the BLM, which shall be involved in setting up monitoring design and criteria for these plots.– Monitoring for vegetation change in the mowed areas shall be bonded to ensure adherence to this monitoring stipulation.– Reporting for vegetation monitoring shall be submitted by July 1 of each year.• Weeds<ul style="list-style-type: none">– A PUP shall be completed and signed prior to the Notice to Proceed being issued.– The Applicant is responsible for treatment and control of all non-native and noxious weeds for the lifetime of their ROW and until all restoration/decommissioning	Sections 3.6, 3.7, 3.8 and 3.10	All Project areas	Prepare and implement the Site Restoration Plan and Integrated Weed Management Plan, and Decommissioning and Site Reclamation Plan	BLM-approved qualified biologist/ botanist	Site Restoration Plan Integrated Weed Management Plan <u>Decommissioning and Site Reclamation Plan</u> Monitoring reports	Prior to, during, and after construction and decommissioning	Verified by: Date:

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<p>standards have been met. Specific control measures shall be identified in an Integrated Weed Management Plan.</p> <ul style="list-style-type: none">– The contractor used for weed treatments shall be familiar with Mojave Desert vegetation to the extent that they are able to identify habitat for, and identify plant material belonging to, the sensitive plant species within the Project area. The person(s) knowledgeable about Mojave Desert vegetation shall be present at all times while the weed contractors are on site. This weed contractor shall be approved in advance by the BLM. As an alternative, weed crews shall be accompanied during all surveys and treatments by a BLM-approved botanist.– Vector areas, including along roadways, shall be cleared (through biological and/or chemical control) of any weed species that have or shall have seeds present, prior to ground disturbance.– Sensitive habitats, including high-density desert tortoise habitat and threecorner milkvetch habitat, shall be cleared (through biological and/or chemical control) of any non-native and noxious weed species that has or shall have seeds present, prior to ground disturbance.– Flagging or another indicator shall be used to distinguish threecorner milkvetch habitat from adjacent tortoise habitat to assist in identifying the herbicides used in which areas. The color scheme or other indicator shall be taught to all personnel on site during WEAP training.– A BLM-approved botanist shall conduct regular surveys for weed species throughout construction and O&M. Surveys shall be conducted when weed species are detectable but before they are anticipated to have gone to seed.– Any new weed species discovered on site shall be reported immediately (within 2 days) to BLM. A specimen shall be taken and submitted to the University of Nevada, Las Vegas herbarium (and if two specimens are available, to the University of Nevada, Reno herbarium). If there is more than one plant, all other plants and plant parts shall be treated or removed from the site and disposed of appropriately.– The Applicant is responsible for the complete treatment and eradication of any new weeds that are introduced, or existing weeds that spread to new areas as a result (as far as can be reasonably determined) of Project activities during construction, restoration of temporary disturbance, and O&M. The Applicant is also responsible for treating and eradicating weeds in this category that spread onto adjacent BLM lands.– All weeds shall be treated before they go to seed. If any weeds are discovered that are beginning to go to seed before they have been treated, they shall be hand-pulled, bagged in a puncture-proof bag or container, and disposed of in an enclosed, off-site trash receptacle.– Monitoring shall be conducted during appropriate seasons throughout the year (this shall require multiple site visits per month in different seasons when weeds are emerging).– Reporting shall be conducted biannually during construction, restoration of temporary disturbance areas, and during the first 3 years of O&M. This monitoring shall be compiled into an annual report that details all dates when monitoring occurred; the dates of all weed treatments; the number and types of weeds found; if any new weeds were located; and the amount, types, and locations of herbicides							

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<p>used (in accordance with the PUP). Reporting shall be submitted to the BLM on or before December 31 of each year. During years when biannual reporting is required, reports shall also be submitted on or before July 1 (to document that spring surveys and treatments for weeds took place).</p> <ul style="list-style-type: none">– Weed vectors (roads, transmission lines, etc.) associated with the Project shall also be monitored and treated according to the Integrated Weed Management Plan.– The Applicant shall be required to bond for the estimated cost of weed treatment per acre for the 30-year ROW period. If any part of the Integrated Weed Management Plan is not being followed or adhered to during any year, the bonded portion of weed treatment for that year shall not be returned and shall be used to treat weeds adjacent to the Project area.– Only certified weed-free materials shall be used during construction, restoration, and O&M. This includes gravel, seed mixes, and any waddles or other erosion control devices.– Prevention measures shall be implemented, including WEAP training and vehicle and equipment cleaning protocols (as described in the Integrated Weed Management Plan) as well as construction reporting. <ul style="list-style-type: none">• Cacti and Yucca<ul style="list-style-type: none">– If the Proposed Action is selected, a specific plan for use of cacti and yucca would be developed by the BLM to attempt to salvage the maximum number of cacti and yucca possible <u>and provided for sale to the public for purchase, and then to commercial users for purchase, per BLM's forestry program guidance.</u> All other measures herein are based on the All Mowing Alternative or Hybrid Alternative.– All cacti and yucca within permanent disturbance areas <u>where vegetation is removed</u> (i.e., such as roads, battery storage areas, <u>traditional development areas,</u> and transmission line towers) shall be salvaged and transplanted in a natural pattern within the mowed areas <u>after construction or provided for sale to the public for purchase, and then to commercial users for purchase, per BLM's forestry program guidance.</u> More details shall be included in the Site Restoration Plan.– Within sensitive plant habitat, where drive and crush methods would be used with the Hybrid Alternative, cacti and yucca shall be avoided when possible. If they are unavoidable, they may be cut down (cacti) or ground down (yucca) to a height of no less than 6 inches (15 centimeters) (excepting small cacti or barrel cacti – these shall be left in place). Cut or ground materials from cacti and yucca shall be left on site where they fall. Regeneration of cacti and yucca in these areas shall be allowed to occur.– Within mowed areas, cacti and yucca shall be cut down (cacti) or ground down (yucca) to a height of no less than 16 inches (41 centimeters). Cut or ground materials from cacti and yucca shall be left on site where they fall. Smaller cacti or yucca (already under 16 inches [41 centimeters]) shall not be cut. Cacti and yucca shall be flagged and avoided during construction as much as possible. Flagging shall be removed after construction. More details shall be provided in the Site Restoration Plan. The designated botanist is responsible for flagging and monitoring cacti and yucca during construction.							

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<ul style="list-style-type: none">Barrel cacti shall not be reduced in height even if they are over 16 inches (41 centimeters). Barrel cacti shall be avoided during construction.Some The salvaged cacti and yucca may be salvaged and shall be held in an onsite nursery to be transplanted back into the site after construction. This shall be identified in the Site Restoration Plan in order to provide additional habitat structure for the Mojave Desert tortoise under the All Mowing Alternative or Hybrid Alternative.The designated botanist shall submit a report to the BLM after construction with the numbers of cacti and yucca damaged by construction activities. <ul style="list-style-type: none">Desert Pavement and Biological Soil Crust If the Proposed Action is selected, measures to protect or store biocrust shall be identified in the Site Restoration Plan.<ul style="list-style-type: none">For any alternative, significant stands of biocrust shall be salvaged by hand or using very small equipment, where it is possible to do so, and stored until it can be restored from the areas where it was removed.General Restoration<ul style="list-style-type: none">The Applicant shall develop and bond for a Site Restoration Plan based on BLM's restoration template.The Applicant shall develop and bond for an Integrated Weed Management Plan.The Applicant shall develop and bond for a site Decommissioning Plan, which shall incorporate BLM's restoration template and include future BMPs.							
<p>MM VG-2: Threecorner Milkvetch and Other Special Status Plants</p> <ul style="list-style-type: none">The Applicant is required to submit a permit application for impacts on threecorner milkvetch take of plants or disturbance of a management area from the Nevada Division of Forestry. There shall be no disturbance (i.e., any sort of construction) in modeled habitat for threecorner milkvetch unless a final permit from the Nevada Division of Forestry is obtained <u>following pre-construction surveys to identify the locations of threecorner milkvetch individuals.</u>Seed collection of threecorner milkvetch seeds shall take place in <u>areas where individuals have been observed</u> development areas C, D, and E prior to ground disturbance of that habitat. Seed shall be collected from any species that emerge in the spring prior to planned disturbance. Disturbance of sensitive plant habitat cannot commence before seed collection from plants has occurred. Seed collection shall be contracted by the Applicant to a BLM-approved botanic garden with staff experience with conservation seed collections of sensitive species. The botanic garden shall be contracted by the Applicant to store the seed for the 30-year period of the ROW. If the ROW is renewed, the contract shall be extended as long as the Project is ongoing to preserve the seed. The seed shall be used on habitat within the Project site after decommissioning takes place.The Applicant shall bond for the cost of <u>ensure that seeds collected are stored</u> collection and seed storage by an approved botanic garden. The bond shall be returned when these stipulations have been successfully completed.There shall be no disk and roll in <u>areas of threecorner milkvetch habitat, identified as "known occurrences" according to the Hamilton and Kokos model shown on Figure 3.6-19, development areas C, D, and E</u> under the Hybrid Alternative. These areas shall be	Section 3.6	Modeled habitat for threecorner milkvetch <u>All Project Areas</u>	Implement threecorner milkvetch seed collection and weed control measures	BLM-approved botanist Applicant	Monitoring reports	Prior to, during, and after construction and decommissioning	Verified by: Date:

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<p>developed using drive and crush methods to preserve the sandy soils where habitat for threecorner milkvetch occurs. This approach shall help to mitigate for spread of noxious and non-native weeds and has the best chance of preserving some semblance of habitat for this species. Where the drive and crush method is used, vegetation shall be allowed to regrow to a minimum height of 12 inches (31 centimeters) after construction.</p> <ul style="list-style-type: none">• A designated, BLM-approved botanist shall be on site during construction and restoration of temporary disturbance areas to monitor sensitive plant habitats and to ensure compliance with these stipulations.• All Sahara mustard shall be removed from modeled threecorner milkvetch habitat prior to construction.• Sahara mustard shall be removed annually, before it has gone to seed, from all modeled habitat for threecorner milkvetch. Multiple treatments shall likely be necessary to remove different cohorts of Sahara mustard. All other pre-existing weed species shall be kept below densities found on the Project site pre-disturbance.• Herbicide treatment would be completed in threecorner milkvetch habitat and in Nye milkvetch habitat prior to March 15 to avoid non-target impacts to sensitive plant species. After March 15, only hand-pulling of weeds in any sensitive milkvetch habitat is permitted.• There shall be no use of aminopyralid within modeled habitat for threecorner milkvetch or within 656 feet (200 meters) of any modeled habitat. There shall be no use of aminopyralid within habitat for Nye milkvetch (as determined by pre-project surveys).• Annual monitoring for threecorner milkvetch (using BLM-approved protocol) within the impacted population group by a BLM-approved botanist is required. Monitoring shall determine the number of threecorner milkvetch plants that emerge each year, including the reproductive success of those plants. Monitoring shall determine if weeds are spreading as a result of Project-related activities, and if and how weed spread is impacting sensitive plant populations. This monitoring shall be summarized in an annual report to BLM, due by July 1 of each year.• The Applicant shall bond for the cost of monitoring ensure that threecorner milkvetch in the impacted population group <u>are monitored</u> for the 30-year ROW. If each successive year monitoring is performed and the report is submitted by the deadline, that year's bond amount shall be returned. If monitoring and reporting are not completed, that bond amount shall be used by BLM to fund monitoring of threecorner milkvetch.• WEAP training shall include information on habitat for all sensitive species, including how that habitat is marked on the ground (flagging, flagging color, etc.) in order for contractors to follow appropriate avoidance and weed treatment stipulations.							
<p>MM VG-3: Drainage Protection</p> <ul style="list-style-type: none">• The Applicant shall comply with Section 404 of the Clean Water Act permit requirements from the USACE, based on actual Project impacts on ephemeral dry wash jurisdictional features (depending upon the selected alternative and direct Project impacts).• Road building, construction activities and vegetation clearing within ephemeral drainages shall be minimized to the extent feasible.	Section 3.6	All Project areas	Compliance with Section 404 of the Clean Water Act permit requirements from USACE	Applicant Contractor	Section 404 of the Clean Water Act (individual permit) Monitoring reports	During construction	Verified by: Date:

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<ul style="list-style-type: none"> The Applicant shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities or any other substances that would be hazardous to vegetation or wildlife resources to enter ephemeral drainages or be placed in locations that may be subjected to high storm flows. Spoil sites shall not be located within 30 feet (9 meters) of the boundaries and drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages. No equipment maintenance shall occur within 150 feet (46 meters) of any ephemeral drainage where petroleum products or other pollutants from the equipment may enter these areas under any flow. 							
<p><i>MM WILD-1: Reduced Project Footprint</i></p> <p>During preparation of the final Plan of Development, the Applicant shall coordinate with the BLM to minimize the amount of ground disturbance needed to effectively construct and operate the facility. The Applicant shall provide a revised Project footprint based on additional engineering design that shall be reviewed and approved by the BLM prior to issuance of a Notice to Proceed for construction. All disturbance areas shall be refined and designed to the minimum size needed to safely and legally operate the facility, including access roads. Justifications for disturbances, such as access road widths, substrates, locations, and frequency, shall be provided upon BLM request during review of the revised footprint.</p>	Sections 3.6, 3.7 and 3.8	All Project areas	Revise to minimize Project footprint during final engineering	Applicant BLM	Final engineering design	Prior to construction	Verified by: Date:
<p><i>MM WILD-2: Qualified Biologist</i></p> <p>The Applicant shall designate a USFWS-qualified biologist to be responsible for overseeing compliance with mitigation measures related to the protection of ecological resources throughout all Project phases, particularly in areas requiring avoidance or containing sensitive biological resources, such as special status species and important habitats. Additional qualified biological monitors may be required on site during all project phases, as determined by the authorizing federal agency, the USFWS, and appropriate state agencies. Qualified and Authorized Biologists shall be approved by USFWS.</p>	Section 3.7 and 3.8	All Project areas	Designate qualified biologist On-site monitoring	Applicant Qualified biologist USFWS	Monitoring reports	Prior to and during construction and O&M	Verified by: Date:
<p><i>MM WILD-3: Worker Environmental Awareness Program</i></p> <p>WEAP training shall include identification and protection of ecological resources (especially for desert tortoise), including knowledge of mitigation measures required by federal, state, and local agencies. Workers must be aware that only qualified biologists are permitted to handle listed species according to specialized protocols approved by the USFWS. Workers shall not approach wildlife for photographs or feed wildlife.</p>	Section 3.7 and 3.8	N/A	Develop and provide WEAP training	<u>Applicant</u> Contractor	WEAP Training Program Sign-in sheets and record of training	Prior to and ongoing throughout construction <u>and</u> <u>O&M</u>	Verified by: Date:
<p><i>MM WILD-4: Elimination of Wildlife Hiding Locations</i></p> <p>The number of areas where wildlife could hide or be trapped (e.g., open sheds, pits, uncovered basins, and laydown areas) shall be minimized. For example, an uncovered pipe that has been placed in a trench shall be capped at the end of each workday to prevent animals from entering the pipe. If a special status species is discovered inside a component, that component must not be moved or, if necessary, moved only to remove the animal from the path of activity, until the animal has escaped.</p>	Section 3.7 and 3.8	All Project areas	Minimize wildlife hiding locations	<u>Applicant</u> Contractor/ construction personnel	None	During construction <u>and</u> <u>O&M</u>	Verified by: Date:

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<i>MM WILD-5: Elimination of Conflicts with Wildlife</i> Access roads shall be appropriately constructed, improved, maintained, and provided with signs to minimize potential wildlife/vehicle collisions and facilitate wildlife movement through the Project area. Project vehicle speeds shall be limited in areas occupied by special status animal species. Appropriate speed limits shall be determined through coordination with federal and state resource management agencies. Traffic shall be required to stop to allow wildlife to cross roads. Unless authorized, personnel shall not attempt to move live, injured, or dead wildlife off roads, ROWs, or the project site. Honking horns, revving engines, yelling, and excessive speed are inappropriate and considered a form of harassment. If traffic is being unreasonably delayed by wildlife in roads, personnel shall contact the project biologist and security, who shall take any necessary action. <u>Pet animals shall not be permitted to be brought onto the Project site.</u>	Section 3.7 and 3.8	All Project areas	Minimize conflicts with wildlife and construction vehicles	<u>Applicant</u> Contractor/all construction personnel	None	During construction <u>and</u> <u>O&M</u>	Verified by: Date:
<i>MM WILD-6: Fitting of Water Supply Ponds with Wildlife Protection Devices</i> If any chemicals, as allowed in an approved PUP, are used in the construction water storage ponds that are not bird or wildlife compatible or if injuries to birds occur due to increased flocking at the ponds, the ponds shall be fitted with exclusion devices <u>devices</u> such as floating balls or fencing. Textured material shall be placed on the bottom of the ponds to minimize the likelihood of wildlife drowning.	Section 3.7	Construction water storage ponds	Install exclusion devices , if needed	Contractor	None	During construction	Verified by: Date:
<i>MM WILD-7: Bird and Bat Conservation Strategy Requirements</i> The Bird and Bat Conservation Strategy shall include a robust systematic monitoring and adaptive management plan to assist in avoiding and minimizing Project impacts on migratory birds. The monitoring shall include overall annual mortality, species composition, and spatial differentiation based on established searcher efficiency and carcass persistence trials, being established through other studies at solar facilities, at the site and shall be designed to account for seasonal differences and fatality events of rare species.	Section 3.7	All Project areas	Preparation and implementation of the Bird and Bat Conservation Strategy	Qualified biologist	Bird and Bat Conservation Strategy Monitoring reports	Prior to and during construction <u>and</u> <u>O&M</u>	Verified by: Date:
<i>MM WILD-8: Nesting Bird Avoidance and Minimization</i> Habitat-altering activities shall be avoided during bird breeding season to the extent possible, which generally occurs from February 15 through August 31. If a Project-related activity must occur during the breeding season, a qualified biologist shall survey the area for nests immediately prior to commencing construction activities. The surveys shall include burrowing and ground-nesting species in addition to those nesting in vegetation. If any active nests are found, an appropriately-sized buffer area shall be established in coordination with the BLM and maintained until the young birds fledge. This buffer shall be required to connect to another suitable undisturbed habitat. The above dates are a general guideline, and any active nests observed outside of this range shall also be avoided.	Section 3.7	All Project areas	Avoidance of habitat-altering activities during bird breeding season	Contractor/ Qualified biologist	None	Bird breeding season (typically February 15 through August 1)	Verified by: Date:
<i>MM T&E-1: Dust Palliative Study Funding</i> In accordance with MM AQ-1, the Applicant shall contribute funds to a BLM study to understand the effects of dust palliatives mobilized in stormwater runoff on the health of desert tortoises.	Section 3.8	N/A	Contribute funds to the BLM	Applicant	None	During construction <u>and</u> <u>O&M</u>	Verified by: Date:
<i>MM AQ-1: Emissions Controls</i>	Sections 3.3,	All Project areas	Implement the Dust	Contractor/all	Dust Control	During	Verified by:

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<p>The Dust Control and Air Quality Plan may shall include, at a minimum, the following fugitive dust and equipment controls to minimize emissions:</p> <ul style="list-style-type: none">• Use equipment that meets or exceeds emissions standards specified in the state code of regulations and meets or exceeds the applicable United States Environmental Protection Agency Tier 3 and Tier 4 emissions requirements.• Incorporate multiple methods for dust suppression (i.e., water, gravel, and/or regulation-compliant palliatives) on unpaved, disturbed areas where no natural vegetation occurs.• Install a gravel apron to reduce mud/dirt trackout from unpaved truck exit routes.• Install pipe-grid trackout-control device to reduce mud/dirt trackout from unpaved truck exit routes.• Construct three-sided enclosures for storage piles.• Water the storage piles or otherwise applying a cover when wind events are declared.• Consider surfacing access roads with aggregate that is hard enough that vehicles cannot crush it, where necessary to reduce substantial wind erosion.• Manage unpaved roads, disturbed areas (e.g., areas of scraping, excavation, backfilling, grading, and compacting), and loose materials generated during Project activities as frequently as necessary to effectively minimize fugitive dust generation.• Use machinery that has air-emission-control devices as required by federal, state, and local regulations or ordinances.• Limit travel to stabilized roads.• Consider paving the main access road to the main power block and the main maintenance building.• Enforce posted speed limits (e.g., 10 miles per hour [16 kilometers per hour]) within the construction site to minimize airborne fugitive dust.• Cover vehicles that transport loose materials as they travel on public roads, using dust suppressants on truck loads, and keeping loads below the freeboard of the truck bed.• Install wind fences around disturbed areas that <u>have not been treated with other effective dust control measures outlined in this measure to reduce dust to baseline conditions</u> could affect the area beyond the site boundaries (e.g., nearby residences).• Suspend soil disturbance activities and travel on unpaved roads during periods of high winds. Site-specific wind speed thresholds shall be determined on the basis of soil properties determined during site characterization.• To the extent practicable, avoid chemical dust suppressants that emit volatile organic compounds within or near ozone nonattainment areas.• Consider use of ultra-low-sulfur diesel with a sulfur content of 15 parts per million or less for project vehicles.• Limit the idling time of equipment to no more than 5 minutes, unless idling must be maintained for proper operation (e.g., drilling, hoisting, and trenching).• Access transmission lines from designated routes to minimize fugitive dust emissions.	3.6, 3.7, 3.8, 3.10, and 3.17		Control and Air Quality Plan	construction personnel	and Air Quality Plan Monitoring reports	construction and decommissioning	Date:

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<ul style="list-style-type: none">Minimize on-site vehicle use and require routine preventive maintenance, including tuneups to meet the manufacturer’s specifications, to ensure efficient combustion and minimal emissions.Encourage the use of newer and cleaner equipment that meets more stringent emission controls.Limit access to the construction site and staging areas to authorized vehicles only through the designated treated roads if too much dust is generated.Stage construction to limit the areas exposed at any time.Consider inspecting and cleaning tires of all construction-related vehicles to ensure they are free of dirt before they enter paved public roadways.Cleanup visible trackout or runoff dirt on public roadways resulting from the construction site (e.g., street vacuum/sweeping).Salvage topsoil from all excavations and construction activities during reclamation or interim reclamation and reapply to construction areas not needed for facility operation as soon as activities in that area have ceased.Consider atmospheric conditions, such as wind level, when planning construction activities to minimize dust.Incorporate environmental inspection and monitoring measures and other relevant plans to monitor and respond to air quality during construction, operations, and decommissioning, including adaptive management protocols.							
<p>MM VR-1: Visual Design Elements</p> <p>The Project shall incorporate the following design elements into the final engineering and receive approval from BLM prior to issuance of an NTP, to minimize moderate to strong visual contrast:</p> <ul style="list-style-type: none">Design the boundaries of the development areas and linear facilities (e.g., gen-tie lines) to follow natural land contours rather than straight lines, to the greatest extent feasible. Vary the grid layout where appropriate to reduce contrast caused by long straight roads and array blocks. Employ an offset in the grid layout to reduce visual contrast caused by long straight roads and, to the greatest extent possible, arrays. The result shall be that no road extends from one side of the solar field to the other in a straight line.Minimize perimeter clearing (maximum 20 feet [6 meters]) for patrol road (typically 20 feet [6 meters]) inside and outside of the Project fence line with consideration of the local fire regime.Realign the gen-tie line that runs parallel to I-15 <u>to minimize the length that the gen-tie line is parallel to the I-15. An option to achieve this requirement is to realign the gen-tie line</u> so it follows the northern project boundary in development area A and crosses I-15 at a perpendicular angle near the other gen-tie lines.Reposition the O&M building so it is integrated into the solar facility and screened from view from Valley of Fire Road.	Sections 3.1, 3.2, 3.10, and 3.14	All Project areas	Implement visual design elements during final engineering	Applicant	Final engineering design	Prior to construction	Verified by: Date:
<p>MM VR-2: Color and Surface Treatment</p> <p>The following color or surface treatments shall be applied to minimize moderate and strong</p>	Sections 3.1, 3.2, 3.10, and	All Project areas	Determine appropriate colors	Applicant	Final engineering	Prior to and during	Verified by:

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<p>visual contrast:</p> <ul style="list-style-type: none">• Apply colors from BLM’s Standard Environmental Colors chart, such as Shadow Gray and Covert Green, to Project structures and facilities including O&M facilities, rear surfaces of the collectors, frames, tracker structures, Power Conversion Station, and water tank facilities where most visible from public vantages (i.e., I-15 and Valley of Fire Road). Where color or patina options are available by the manufacturer or allowable under warranty for equipment containers, frames, signs, or other solar facilities, the least reflective and contrasting color or patina shall be selected and/or applied. The Project perimeter fencing shall be color treated along Valley of Fire Road between development areas B and C (approximately 1.6 miles [2.6 kilometers]) to blend with the natural environment, such as through using a patina. Grouped structures shall be treated with the same color and surfaces maintained when necessary.• Apply rock stains or other color treatments appropriate with the surrounding landscape where necessary, <u>or use locally sourced gravel and rocks, to ensure the materials do not contrast with native materials,</u> along off-site and internal access roads, graveled surfaces, areas permanently cleared of vegetation, off-site corridors for the collector system and gen-tie, and rock-lined berms or drainage facilities.• Select materials, coatings, and paints for the Project that have little to no specular or reflective qualities whenever possible.• Apply surface treatments or dulling agents to minimize substantial sources of reflected light from Project facilities. Substation equipment shall be treated with a low-reflectivity neutral finish <u>as allowable by warranty and in accordance with the manufacturer's guidance.</u> Insulators at substations and on takeoff equipment shall be non-reflective and non-refractive <u>as allowable by warranty and in accordance with the manufacturer's guidance.</u> The surfaces of substation structures shall be given low-reflectivity finishes with neutral colors that contrast minimally with the surrounding landscape <u>as allowable by warranty and in accordance with the manufacturer's guidance.</u> Chain-link fences shall have a dulled, darkened finish to reduce contrast.• Maintain and repaint all color-treated surfaces <u>(e.g., O&M facilities, water tanks)</u> intended to reduce contrast when color fades or flakes. <p>Specific color and surface treatment shall be determined in conjunction with the BLM prior to issuance of the Record of Decision.</p>	3.14		and color treat Project’s structural surfaces	BLM Contractor	design	construction	Date:
<p>MM VR-3: Lighting Plan</p> <p>A Lighting Plan shall be prepared that details the proposed lighting design and demonstrates how impacts from artificial light at night shall be minimized during facility construction and operation. Lighting for facilities shall not exceed the minimum number of lights and brightness required for safety and security and shall not cause excessive reflected glare. <u>Warm (e.g., Low-pressure sodium (LPS), High-pressure Sodium (HPS) and low-color-temperature LEDs [CCT < 3,000 K; S/P ratio < 1.2])</u> light sources shall be used to reduce light pollution. Full cutoff luminaires shall be used to minimize uplighting. Lights shall be directed downward or toward the area to be illuminated. Light fixtures shall not spill light beyond the Project boundary. Lights in highly illuminated areas that are not occupied on a continuous basis shall be equipped with switches, timer switches, or motion detectors so that the lights operate only when the area is occupied. Where feasible, vehicle-mounted lights shall be used for night maintenance activities.</p>	Section 3.10	All Project areas with lighting	Prepare and implement Lighting Plan	Applicant BLM Contractor	Lighting Plan	Prior to construction	Verified by: Date:

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Where feasible and consistent with safety and security, lighting shall be kept off when not in use. The Lighting Plan shall include a process for promptly addressing and mitigating complaints about potential lighting impacts.							
<i>MM VR-4: Anti-reflective Coating</i> The solar panels installed for the Project shall be treated with anti-reflection coatings.	Sections 3.1, 3.2, 3.10, and 3.14	All solar array areas	Utilize anti-reflective solar panels	Applicant Contractor	Final engineering design	During construction	Verified by: Date:
<i>MM VR-5: Visual Construction Elements</i> Construction of the Project shall adhere to the following procedures to reduce adverse visual effects. These measures shall be incorporated into the final engineering design that must be approved by BLM prior to issuance of an NTP: <ul style="list-style-type: none"> • Delineate construction boundaries. • Minimize surface and vegetation disturbances. Existing rocks, vegetation, and drainage patterns shall be preserved to the greatest extent feasible. Existing, native vegetation shall be preserved to the greatest extent feasible. Where appropriate, the boundary of vegetated areas that are cleared shall be feathered to blend into the surrounding environment. • Contour graded areas to blend with the surrounding topography. • Control erosion and fugitive dust. • Contain and store construction wastes and debris away from well-traveled roadways. Following construction activities, all stakes and flagging shall be removed and disposed of. All waste and debris shall be disposed of in an appropriate off-site facility. • Discuss visual impact mitigation objectives and activities with equipment operators before beginning construction activities. 	Sections 3.10 and 3.14	All Project areas	Include measures in the final engineering design	Applicant BLM	Final engineering design	Prior to and during construction	Verified by: Date:
<i>MM VR-6: Visual Decommissioning Elements</i> Decommissioning of the Project shall adhere to the following procedures to reduce adverse visual effects: <ul style="list-style-type: none"> • Incorporate visual objectives into Decommissioning Plan and Site Reclamation Plan. A Decommissioning Plan and Site Reclamation Plan shall be developed, approved by the BLM, and implemented. The plans shall require the removal of all aboveground and near-ground structures. Some structures can be removed only to a level below the ground surface that would allow reclamation/restoration. Topsoil from all decommissioning activities shall be salvaged and reapplied during final reclamation. The plans shall include provisions for monitoring and determining compliance with the Project's visual mitigation and reclamation objectives. • Recontour and restore surfaces. Soil borrow areas, cut-and-fill slopes, berms, water bars, and other disturbed areas shall be contoured to approximate naturally occurring slopes, thereby avoiding form and line contrasts with the existing landscapes. The surfaces shall be contoured to a rough texture (i.e., use large rocks/boulders, grade uneven surfaces, and/or use vegetation mulches/debris) in order to trap seed and to discourage off-road travel, thereby reducing associated visual impacts. Rocks, brush, and 	Section 3.10	All project areas	Include measures in the final Decommissioning and Site Reclamation Plan	Applicant BLM	Final Decommissioning and Site Reclamation Plan	Decommissioning	Verified by: Date:

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<p>vegetal debris shall be restored whenever possible to approximate preexisting visual conditions.</p> <ul style="list-style-type: none"> • Topsoil. Stockpiled topsoil shall be reapplied to disturbed areas, and the areas shall be revegetated by using a mix of native species selected for visual compatibility with existing vegetation, where applicable, or by using a mix of native and non-native species, if necessary, to ensure successful revegetation. Gravel and other surface treatments shall be removed or buried. • Revegetation. The Project site shall be revegetated using a combination of seeding, planting nursery stock, and transplanting local vegetation within the proposed disturbance areas. Decommissioning activities shall be staged to enable direct transplanting. Where feasible, native vegetation shall be used for revegetation to establish a composition consistent with the form, line, color, and texture of the surrounding undisturbed landscape. 							
<p>MM CR-1: Establishment of Environmental Exclusion Areas</p> <p>An Environmental Exclusion Area (EEA) shall be established around the known tribal cultural property (TCP) and recommended National Register of Historic Places (NRHP)-eligible site in development area A and shall be marked for avoidance during Project construction. A minimum 100-foot (30-meter) exclusion area shall be established around the sites, which shall be clearly identified and maintained throughout construction to ensure that avoided sites are not inadvertently affected. The EEA shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fencing under the consequence of work stoppages or compensatory mitigation. The limits of the exclusion area may be extended, or monitoring may be required, if requested by the Moapa Band of Paiutes during ongoing consultation. The EEA shall also be removed from the Project footprint during the engineering design of the Project, prior to construction, such that the area is outside the borders of the solar development facility. Approximately 29 acres (12 hectares) shall be removed from the Project in development area A to fully avoid the site.</p> <p>An EEA shall also be established encompassing any other known NRHP-eligible archaeological sites within 500 feet (152 meters) of the outer Project boundary and shall include a 100-foot (30-meter) buffer around any sites, as identified in the Class III archaeological surveys conducted between February 22 and July 23, 2018 (BLM 2018a). The EEA shall be clearly marked for avoidance in the field during Project construction (using the previously described methods for the EEA around the site in development area A).</p>	Sections 3.12 and 3.13	Known TCP and recommended NRHP-eligible site	<p>Delineate EEAs with 100-foot buffer</p> <p>Remove EEAs from the Project footprint</p>	<p>Applicant</p> <p>BLM</p> <p>Qualified archaeologist</p>	Final engineering design	During engineering design and prior to construction	<p>Verified by:</p> <p>Date:</p>
<p>MM CR-2: Cultural Resources Monitoring and Mitigation Plan</p> <p>Prior to construction, a Cultural Resources Monitoring and Mitigation Plan (CRMMP) shall be developed and implemented by an archaeologist who meets the Secretary of the Interior’s standards and is approved by the BLM. It shall include the following details:</p> <ul style="list-style-type: none"> • Cultural Resource Training. Prior to ground-disturbing activities, the Applicant shall retain a BLM-qualified archaeologist, defined as one meeting the Secretary of the Interior’s qualification standards for archaeology and subject to approval by the BLM, to conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the avoidance areas for eligible archaeological sites, the 	Sections 3.12, 3.13, and 3.14	All Project areas and at any site discovery	<p>Designate qualified archaeologist</p> <p>Develop and implement a CRMMP</p>	<p>Applicant</p> <p>BLM</p> <p>Qualified archaeologist</p>	CRMMP	Prior to and during construction	<p>Verified by:</p> <p>Date:</p>

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<p>importance of remaining only within the designated Project site development areas, of the types of cultural resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources, including consequences for vandalism or theft. The Applicant shall ensure that construction personnel are made available for and attend the training and shall retain documentation demonstrating attendance.</p> <ul style="list-style-type: none">• Data Recovery and Preservation. The CRRMP shall also include procedures for preservation and/or data recovery of the NRHP-eligible sites in development areas C and B2 (if these areas are developed under an alternative), and preservation of the 5,843-foot (1,781-meter) length of the “California Crossing” of the Old Spanish Trail in development area B. The BLM shall consult with appropriate Native American representatives in determining appropriate treatment for the prehistoric cultural resource sites. Archaeological materials recovered shall be curated at an accredited curational facility. The CRMMP shall include provisions for the reporting of monitoring activities and any treatment of resources in a timely manner.• Cultural Resource Discovery. The CRMMP shall detail procedures for halting construction, making appropriate notifications to agencies, officials, and tribes, and assessing NRHP-eligibility in the event that previously unknown cultural resources are discovered during construction. The CRMMP shall require that the contractor immediately cease all work activities in the area (within 100 feet [30 meters]) of the discovery until it can be evaluated by a BLM-qualified archaeologist. After cessation of excavation, the contractor shall immediately contact the BLM archaeologist. The contractor shall not resume work until authorization from the BLM is received. If the qualified archaeologist, in consultation with the BLM, determines that the discovery constitutes a historic property per Section 106 of the National Historic Preservation Act, preservation in place shall be the preferred manner of mitigation. In the event preservation in place is demonstrated to be infeasible, the data recovery and preservation procedures outlined in the CRMMP shall be followed.							
<p>MM CR-3: Discovery of Human Remains</p> <p>If human remains or associated cultural items as defined by the Native American Graves Protection and Repatriation Act are discovered during construction, all work shall be halted in the area of the discovery and the BLM-authorized officer shall be informed immediately. The BLM shall ensure that any Native American human remains, funerary objects, sacred objects, and/or objects of cultural patrimony discovered on BLM-administered lands during implementation of the Project shall be treated as unanticipated discoveries in accordance with the requirements of the Native American Graves Protection and Repatriation Act (Pub. L. 101-601) and 43 CFR Part 10. The preferred protection strategy shall be Project redesign to avoid and protect inadvertent discoveries that contain human remains.</p>	Section 3.12	All Project areas	<p>Halt work in the area of any human remains discovery</p> <p>Inform BLM-authorized officer</p>	<p>Contractor/all construction personnel</p> <p>BLM</p> <p>Qualified archaeologist</p>	As required by BLM to document the discovery	During construction	<p>Verified by:</p> <p>Date:</p>
<p>MM NHT-1: Contribution to the Old Spanish Trail Association <u>and Documentation of the OSNHT</u></p> <p>Applicant-volunteered mitigation of a contribution in the amount of \$25,000 <u>\$250,000</u> shall be provided to the OSTA upon issuance of the Record of Decision. This contribution shall be used to substantially and materially support the goals of the OSTA to preserve the history of the Old Spanish Trail in the region and to promote the general education of that history. The contribution</p>	Section 3.14	N/A	<p>Contribute \$25,000 <u>\$250,000</u> to the OSTA</p> <p><u>Hire an expert to take professional photographs and</u></p>	Applicant	<p><u>Final documentation materials</u> None</p>	Upon issuance of the Record of Decision and prior to construction	<p>Verified by:</p> <p>Date:</p>

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<p>shall support the following OSTA initiatives <u>and documentation of the OSNHT</u>:</p> <ul style="list-style-type: none">• Capturing detailed and high-resolution on-site imagery to facilitate the creation of an interpretive “virtual” tour of the California Crossing High Potential (HP) Segment in coordination with the OSTA (e.g. Google Earth Streetview or similar perspective imagery coupled with additional interpretive digital media content development or potentially even virtual reality).• Projects performed by Eagle Scouts and others to install markers, and in some cases replace markers, along the Old Spanish Trail. Markers shall consist of reinforced concrete monoliths with engraved lettering indicating "Old Spanish Trail".• Printing of copies of Harold Steiner's "The Old Spanish Trail Across the Mojave Desert" for distribution to the public, to raising awareness of the history of the trail. Providing a copy to each school library in Southern Nevada. Reprints shall also be offered for sale at a minimum from the following locations: the Old Mormon Fort in Las Vegas, the Las Vegas Preserve, and the BLM Book Store at the Red Rock National Recreation Area.• Preparation and publishing of a book describing the history of the Old Spanish Trail through Nevada, in cooperation with the Eagle Scouts, with the goal of placing the book in all public school libraries in Clark County.• Procuring and placing Old Spanish Trail signage in urban areas in Clark County in cooperation with Clark County, NPS, and BLM.• Identifying Native American rock art sites in Southern Nevada that include Old Spanish Trail-associated elements. If any Old Spanish Trail rock art is found the art shall be photographed, logged, and GPS data collected of the site locations. The collected data shall be used to develop a site map that shall be available to OSTA Members.• Preparing a map of the Old Spanish Trail through Nevada for distribution at key locations, including state park and NPS visitor centers, state and local agency offices, and libraries.• Preparing a brochure highlighting key OSTA activities and recognizing participants to help foster continued participation in OSTA preservation activities.• Producing other interpretive media that creates a literary vicarious experience (e.g. digital media, novel, graphic novel, short story, picture book, etc.) in coordination with the OSTA.• Creating a diverse social media platform for the Nevada chapter of the OSTA that shall convey up-to-date information, activities and histories/photographs of the Old Spanish Trail.			<u>commission development of media, in coordination with OSTA</u>				
<p><i>MM NHT-2: Restoration of the Traditional Development Areas – Hybrid Alternative</i></p> <p>To minimize the duration of time that the setting of the OSNHT corridor is disrupted by the traditional development areas under the Hybrid Alternative, the Applicant shall:</p> <ul style="list-style-type: none">• Immediately begin restoration of the traditional development areas using the criteria presented in the Site Restoration Plan	<u>Section 3.14</u>	<u>Traditional development areas</u>	<u>Implement the Site Restoration Plan in areas of traditional development</u>	<u>Applicant</u>	<u>Final engineering plans</u>	<u>During engineering design and prior to construction</u>	<u>Verified by:</u> <u>Date:</u>
<p><i>MM TRA-1: Traffic and Transportation Plan Measures</i></p> <p>A Traffic and Transportation Plan shall be prepared for implementation during construction, <u>and</u></p>	Sections 3.1 and 3.16	All Project areas	Prepare and implement Traffic	Applicant	Traffic and Transportation	Prior to and during	Verified by:

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<p>operation, and decommissioning of the Project. The plan shall include, at a minimum, the following information and measures:</p> <ul style="list-style-type: none">• Identify traffic control measures needed, consistent with the requirements in the Manual of Uniform Traffic Control Devices (MUTCD) and specify the circumstances under which each is required. Traffic control measures may include escort vehicles for wide loads, signage, and flaggers.• Use static and variable message signs, as necessary, to inform drivers that there may be delays or trucks entering traffic due to construction.• Provide a breakdown of the number, type, capacity, and dimensions of the construction vehicles that would service the site.• Provide an estimate of the average daily or weekly number of vehicles per vehicle type during each major phase of the work.• Identify effective and safe routes for use by passenger/worker vehicles, delivery vehicles, and excavation and construction vehicles.• Enforce the chosen construction travel routes through contractor stipulations and conditions and periodic verification.• Identify a contact for complaints and indicate how complaints should be addressed.• Organize a carpool program that identifies the best location and time to coordinate carpools to the site for construction employees, incentivize the contractors and subcontractors to implement and encourage carpool and vanpool programs throughout construction, and/or organize a shuttle to take workers from a centralized point in North Las Vegas to the Project site.• Inform the public via the radio, internet, or newspaper about key construction dates, especially those that could affect regional roadways.• Coordinate with the Moapa River Indian Tribe to obtain their schedule of events and to coordinate construction during events to reduce conflicts and hazards from traffic.			and Transportation Plan	Contractor/all construction personnel	Plan	construction and decommissioning	Date:

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<p><i>MM TRA-2: Road Condition Assessment</i></p> <p>The Applicant shall conduct a pre-construction <u>and pre-decommissioning</u> road condition assessment along the low-volume construction traffic routes (i.e., excluding highways) prior to construction. The pre-construction/<u>pre-decommissioning</u> road condition assessment shall include photographs or a video recording. The Applicant shall submit the pre-construction road condition assessment to Clark County Public Works <u>or other applicable agency</u> no less than 30 days prior to construction. Following construction, the Applicant shall conduct a post-construction road condition assessment along Valley of Fire Road or other low-volume roadways. If damage to roads occurs as a result of construction traffic, the Applicant shall restore damaged roadways within 60 days after the completion of construction <u>and decommissioning</u> to a pre-construction/<u>pre-decommissioning</u> condition, based on the pre-construction/<u>pre-decommissioning</u> road condition assessment, or to a condition agreed upon by the Applicant and the roadway owner <u>and obtain any necessary permits</u>. <u>For roadways that are not currently meeting Clark County Public Works or other agency's standards for roadway construction, the agency may not require the Applicant to repair the roadway to meet current standards.</u></p>	Section 3.16	Low-volume construction traffic routes	<p>Conduct pre- and post-construction <u>/decommissioning</u> road condition assessment</p> <p>Restore damaged roadways</p>	<p>Applicant</p> <p>Contractor</p> <p>Clark County Public Works</p>	Pre- and post-construction <u>/decommissioni</u> <u>ng</u> road condition assessment report	<p>No less than 30 days prior to construction</p> <p>Within 60 days post-construction <u>or post-decommissioning</u></p>	<p>Verified by:</p> <p>Date:</p>
<p><i>MM PS-1: Health and Safety Plan</i></p> <p>The Health and Safety Plan shall comply with all Occupational Safety and Health Act (OSHA) and Nevada-OSHA guidelines for the types of activities being performed. All personnel on site during construction, operation, and decommissioning shall be trained and given access to appropriate OSHA and Nevada-OSHA guidelines, and a safety and compliance coordinator shall be assigned to the Project. The plan shall document worker safety practices and address health and safety issues associated with normal and unusual (emergency) conditions related to the high-voltage systems, mechanical systems, and other solar plant operations. Personnel shall be properly trained in the handling of relevant chemicals and wastes and instructed in the procedures to follow in case of a chemical spill or accidental release. The plan shall include procedures for grounding any conducting objects such as buildings, fences, and other metal structures on the site. Grounding shall eliminate effects related to induced current and voltages on conductive objects sharing the ROW.</p> <p>The plan shall also address the selection, transport, storage, and use of all hazardous materials needed for construction, operation, and decommissioning of the facility for local emergency response and public safety authorities, and shall address the characterization, on-site storage, recycling, and disposal or recycling of all resulting wastes, including batteries. The plan shall also include <u>an Emergency Action Plan Site Evacuation Plan</u> that details the evacuation routes and plan for construction workers and Project personnel on site during an emergency. A Waste and Hazardous Materials Management Plan for operation shall also be prepared that identifies the anticipated waste streams; handling instructions for waste streams, including damaged or old batteries and panel waste; and how the wastes shall be managed in accordance with federal, state, and local laws and BLM policy.</p>	Section 3.17	All Project areas	<p>Prepare and implement Health and Safety Plan, including <u>an Emergency Action Plan Site Evacuation Plan</u> and a Waste and Hazardous Materials Management Plan</p> <p>Conduct WEAP training</p>	<p>Applicant</p> <p>Contractor/all construction personnel</p>	Health and Safety Plan, including <u>an Emergency Action Plan Site Evacuation Plan</u> and a Waste and Hazardous Materials Management Plan	<p>Prior to construction</p> <p>During construction, operation, and decommissioning</p>	<p>Verified by:</p> <p>Date:</p>
<p><i>MM PS-2: Oil and Gas Well Avoidance</i></p> <p>The Applicant shall verify the locations of the five oil and gas wells identified in the Project area during the Phase I Environmental Site Assessment. The oil and gas wells shall be demarcated for avoidance during construction of the Project, unless the wells are adequately remediated and</p>	Section 3.17	Around the former oil and gas wells in development area	Identify and demarcate oil and gas wells and show in final engineering	<p>Applicant</p> <p>Contractor</p>	Final engineering design	Prior to and during construction	<p>Verified by:</p> <p>Date:</p>

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closed prior to construction. The avoidance area shall be a minimum of 100 feet (30.5 meters) and shall be clearly delineated in the field with temporary construction fencing and signs.		B	design				
<p><i>MM PS-3: Fire Prevention and Safety Plan</i></p> <p>The Applicant shall prepare and implement a Fire Prevention and Safety Plan to ensure the safety of workers and the public during Project construction, O&M, and decommissioning activities. The Fire Prevention and Safety Plan shall be provided to the BLM for approval before the Applicant receives an NTP. The plan shall incorporate the use of appropriate fire protection equipment, worker training, and consultation with local fire departments to identify appropriate protocols and procedures for fire prevention and early response to minor fires. The plan shall also address the following recommendations, with particular focus on suppressants for fires from lithium-ion cells, including inert gas, carbon dioxide, and Halon and measures to protect batteries against thermal abuse:</p> <ul style="list-style-type: none">• Have a portable trailer-mounted water tank on site and available to workers at all times for use in extinguishing small human-caused fires.• Implement fire watches during hot work on site (e.g., welding, soldering, cutting, drilling, or grinding).• Prepare the implement a Fire Prevention and Safety Plan that incorporates the use of appropriate fire protection equipment, worker training, and consultation with local fire departments to identify appropriate protocols and procedures for fire prevention and early response to minor fires. The plan shall limit where smoking can occur to minimize chances of igniting a fire, and shall identify proper vehicle maintenance and use to minimize fire risks.• Store battery packs at reduced state-of-charge prior to and during construction to reduce the likelihood that crush, puncture, or external heating would lead to cell thermal runaway and a fire ignited by heated cell cases. <u>The specific level of charge that batteries shall be stored out, shall be determined by consulting with the battery manufacturer and/or other knowledgeable professional.</u>• Ensure protocols are in place to quickly extinguish any transmission line breakages that could ignite a fire during construction.• Comply with fire restrictions when they are in effect (43 CFR 9212). Fire restrictions are generally enacted from May through October. Fire restriction orders are available for review at the BLM district offices and on the BLM website.• Practice standard fire prevention measures at all times.• Immediately report fires to 911 or (702) 631-2350 and make all accommodations to allow immediate safe entry for firefighting apparatus and personnel.• Conduct an Origin and Cause Investigation on any human-caused fire by BLM law enforcement or their designated representative. To minimize disturbance of potential evidence located at the fire scene, the Applicant shall properly handle and preserve evidence in coordination with the BLM. The BLM shall pursue cost recovery for all costs and damages incurred from human-caused fires on BLM lands when the responsible party(s) has been identified and evidence of legal liability or intent exists. Legal liability includes, but is not limited to, negligence and strict liability (including statutory and contractual liability) and products liability.	Section 3.17	All Project areas	Prepare and implement Fire Prevention and Safety Plan	Applicant BLM All construction personnel	Fire Prevention and Safety Plan	Prior to and during construction and O&M	Verified by: Date:

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<p>MM PS-4: Spill Prevention and Control Measures</p> <p>The Applicant shall prepare and implement a Spill Prevention, Control, and Countermeasure Plan to identify specific best management practices (BMPs) for managing hazardous materials and waste, including spill prevention, containment, and cleanup, proper handling of wastes, proper procedures for refueling and repairing vehicles, and waste management, among others. As a part of this plan, the Applicant shall:</p> <ul style="list-style-type: none">• Supply the construction site with adequate spill containment kits and personal protective equipment in case of a release.• Maintain construction equipment and maintenance trucks at all times to minimize leaks of motor oils, hydraulic fluids, and fuels.• Retain on-site safety data sheets for the hazardous materials that are expected to be used and/or stored on site.	Section 3.17	All Project areas	Prepare and implement Spill Prevention, Control, and Countermeasure Plan	(1) Applicant (2) BLM – All construction personnel	Spill Prevention, Control, and Countermeasure Plan	Prior to and during construction and O&M	Verified by: Date:

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Appendix I References

Appendix I is revised as follows:

Abella, Scott R. 2010. "Disturbance and Plant Succession in the Mojave and Sonoran Deserts of the American Southwest." International Journal of Environmental Research and Public Health. 1248-1284.

California Energy Commission (CEC). 2013. Carbon Balance in California Desert: Impacts of Widespread Solar Power Generation. November.

Gibson, Lisa. 2019. "Letter to Arevia Power & Solar Partners XI, LLC Regarding Pre-Construction Notification for a Nationwide Permit Number 14 for the Gemini Solar Project." Sacramento, June 10.

Ratte, Mike, interview by Caitlin Gilleran. 2019. Senior Air Quality Scientist, RCH Group (September 30).

Morefield, Jim, interview by Lara Kobelt, BLM. 2019. Supervisory Botanist at Nevada Department of Conservation and Natural Resources. April 3.

Nevada (NV) Energy. 2018. "NV Energy Reid Gardner Station Administrative Order on Consent Fact Sheet." May.

NV Energy. 2019a. "Volume 1 of 5 Nevada Power Company D/B/A NV Energy and Sierra Pacific Power Company D/B/A NV Energy." Third Amendment to the 2018 Joint Integrated Resource Plan. June 24.

NV Energy. 2019b. "Volume 4 of 5 Technical Appendix." Third Amendment to the 2018 Joint

The Nature Conservancy. 2007. "A Conservation Management Strategy for Nine Low Elevation Rare Plants in Clark County", Nevada. April 17.

USFWS. 2011. "Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*). May 6.

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6 References

- Abella, Scott. R. (2010). Disturbance and Plant Succession in the Mojave and Sonoran Deserts of the American Southwest. *International Journal of Environmental Research and Public Health*, 1248-1284.
- Abella, Scott R., and Alice C. Newton. 2009. "A systematic review of species performance and treatment effectiveness for revegetation in the Mojave Desert, USA." In *Arid Environments and Wind Erosion*, by A. Fernandez-Bernal and M. A. De La Rosa, 45-74.
- Adeh, Elnaz Hassanpour, Selker, John S., and Higgins, Chad W. (2018). "Remarkable agrivoltaic influence on soil moisture, micrometeorology and water-use efficiency." *PLoS One*.
- AECOM. (2012). "National Historic Trails Inventory Project. American Recovery and Reinvestment Act 2009 Project." Department of the Interior.
- Allison, Linda J., and McLuckie, Ann M. (2018). "Population Trends in Mojave Desert Tortoises (*Gopherus Agassizii*)." *Herpetological Conservation and Biology*, 13(2):433-452.
- Beatty, Brenda, Jordan Macknick, James McCall, Genevieve Graus, and David Buckner. 2017. "Native Vegetation Performance under a Solar PV Array at the National Wind Technology Center." National Renewable Energy Laboratory (NREL), May.
- Bureau of Land Management (BLM). 2007. *Vegetation Treatments Using Herbicides on Bureau of Land Management Land in 17 Western States*. Final EIS, Washington: U.S. Department of the Interior.
- BLM. (2014, June 30). Dry Lake Solar Energy Zone (SEZ) Competitive Leasing. Retrieved from <http://blmsolar.anl.gov/sez/nv/dry-lake/competitive-leasing/>
- BLM. 2016. *Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management's Land in 17 Western States*. Final EIS, Washington: U.S. Department of the Interior.
- Boarman, W. I. (2002, August 2). "Threats to Desert Tortoise Populations: A Critical Review of the Literature." Retrieved from https://www.fws.gov/nevada/desert_tortoise/documents/misc/tortoise_threats_boarman_usgs_2002.pdf
- California Energy Commission (CEC). (2013, November). "Carbon Balance in California Desert: Impacts of Widespread Solar Power Generation."
- Council on Environmental Quality (CEQ). 1981. "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations."
- CH2M Hill Engineers Inc. (2018, January). "Condition of Certification (COC) BIO-18 Year 4 (2017) Special-status Plants Post-Construction Natural Gas Pipeline Monitoring Report for the Ivanpah Solar Electric Generating System." *Prepared for NRG Energy Services, LLC*.
- Dugan Biological Services, LLC and Phoenix Biological Consulting. (2019, March). "Golden Eagle (*Aquila chrysaetos*) Survey Report for the Gemini Solar Project."

GEMINI SOLAR PROJECT FINAL RMPA/EIS

Public Comment, Responses, and Revisions to the Draft Resource Management Plan Amendment/Draft Environmental Impact Statement

- Gay, Charlie. (2017, May 15). *Hail No! National Lab's Solar Panels Survive Severe Storm*. Retrieved from Office of Energy Efficiency & Renewable Energy:
<https://www.energy.gov/eere/articles/hail-no-national-labs-solar-panels-survive-severe-storm>
- Knight & Leavitt. (2019, March). "Class III Cultural Resources Inventory of Approximately 11,050 Acres for the Gemini Solar Project." Near Crystal, Clark County, Nevada.
- Louis Berger. 2019. "Conceptual Drainage Report Gemini Solar Project." Las Vegas, March.
- Marrou, H., L. Guillioni, L. Dufour, C. Dupraz, and J. Wery. 2013. "Microclimate under agrivoltaic systems: Is crop growth rate affected in the partial shade of solar panels?" *Agricultural and Forest Meteorology* 117-132.
- Masters, Robert A., and Sheley, Roger. L. (2001). "Principles and Practices for Managing Rangeland Invasive Plants." *Journal of Range Management*, 54(5).
- Mulder, Kevin, Andrew Walde, William Boarman, A. Peter Woodman, and Emily Latch. 2017. "Smithsonian Study shows relocated desert tortoises reproduce at lower rate." May 24.
- Nafus, Mella G., Todd C. Esque, Roy C. Averill-Murray, Kenneth E. Nussear, and Ronald R. Swaisgood. 2017. "Habitat drives dispersal and survival of translocated juvenile desert tortoises." *Journal of Applied Ecology* 430-438.
- Nevada Department of Wildlife (NDOW). 2006. "BighornSheep_MovementCorridors_2010."
- NDOW. 2011. "BighornSheep_Potential_Distribution_2010."
- Nevada Division of Water Resources (NDWR). (2008, January 18). State of Nevada Permit to Appropriate Water, Permit No. 76643, approval of State Engineer.
- NDWR. (2018, December 28). Hydrographic Area Summary. Retrieved from <http://water.nv.gov/DisplayHydrographicGeneralReport.aspx>.
- National Renewable Energy Laboratory (NREL). (2013). "Land-Use Requirements for Solar Power Plants in the United States." June. Retrieved from <https://www.nrel.gov/docs/fy13osti/56290.pdf>
- NRG Energy Services. (2018, January 24). "Annual Compliance Report January 1, 2017 - December 31, 2017 Reporting Period."
- Nussear, Kenneth E. 2004. "Mechanistic investigation of the distributional limits of the desert tortoise *Gopherus agassizii*." January.
- Nussear, Kenneth E., Todd C. Esque, Dustin F. Haines, and C. Richard Tracy. 2007. "Desert Tortoise Hibernation: Temperature, Timing, and Environment." *Copeia* 378-386.
- Nussear, K. E., C. R. Tracy, P. A. Medica, D. S. Wilson, R. W. Marlow, and P. S. Corn. 2012. "Translocation as a Conservation Tool for Agassiz's Desert Tortoises: Survivorship, Reproduction, and Movements." *The Journal of Wildlife Management* 1341-1353.

GEMINI SOLAR PROJECT FINAL RMPA/EIS

Public Comment, Responses, and Revisions to the Draft Resource Management Plan Amendment/Draft Environmental Impact Statement

- Phoenix Biological Consulting. (2018a). "Desert Tortoise Survey Report (Areas A-E) for the Gemini Solar Project."
- Phoenix Biological Consulting. (2018b). "Desert Tortoise Survey Report Areas B1, B2, F & G for the Gemini Solar Project."
- Ratte, Mike, interview by Caitlin Gilleran. 2019. Senior Air Quality Scientist, RCH Group (September 30).
- Robertson v. Methow Valley Citizens*, 490 U.S. 332 (U.S. Supreme Court May 1, 1989).
- Rostal, D. V. (1994). "Seasonal reproductive cycle of the desert tortoise (*Gopherus agassizii*) in the eastern Mojave Desert." *Herpetological Monographs* 8(8):72.
- Suuronen, Anna, Christian Muñoz-Escobar, Anssi Lensu, Markku Kuitunen, Natalia Guajardo Celis, Pablo Espinoza Astudillo, Marcos Ferrú, Andrés Taucare-Ríos, Marcelo Miranda, and Jussi V. K. Kukkonen. 2017. "The Influence of Solar Power Plants on Microclimatic Conditions and the Biotic Community in Chilean Desert Environments." *Environmental Management*.
- United States Fish and Wildlife Service (USFWS). (2011, May 6). Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*).
- USFWS. (2015). "Range-Wide Monitoring of The Mojave Desert Tortoise (*Gopherus Agassizii*): 2013 and 2014 Annual Reporting." June.
- USFWS. 2018. "Preparing for any Action that May Occur within the range of the Mojave Desert Tortoise (*Gopherus agassizii*).\" October 26.
- United States Geological Survey (USGS). (1986). *Ground-Water Quality in Nevada A Proposed Monitoring Program Open File Report 78-768*. Carson City: United States Department of the Interior Geological Survey.

ATTACHMENT A.1

Substantive Comment Letters

Public Agencies and Tribal Government

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901**SEP 05 2019**

Herman Pinales
Energy and Infrastructure Project Manager
Bureau of Land Management
Las Vegas Field Office
4701 North Torrey Pines Drive
Las Vegas, NV 89130-2301

Subject: Gemini Solar Project Resource Management Plan Amendment and Draft Environmental Impact Statement, Clark County, Nevada (EIS No. 20190123)

Dear Mr. Pinales:

The U.S. Environmental Protection Agency has reviewed the Resource Management Plan Amendment and Draft Environmental Impact Statement for the Gemini Solar Project pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and Section 309 of the Clean Air Act.

The EPA served as a cooperating agency under NEPA and under Title 41 of the Fixing America's Surface Transportation Act during the development of the DEIS and provided formal scoping comments (August 27, 2018). We also submitted comments on preliminary draft chapters of the Administrative DEIS (Spring 2019) and attended a site visit on November 26-27, 2018. We appreciate the responsiveness to our input and feedback during development of this document.

According to the DEIS, the proposed Gemini Solar Project would consist of a 690-megawatt solar photovoltaic electrical generating facility and associated generation tie-line located on approximately 7,100 acres of Bureau of Land Management-administered land. The Proposed Action would be constructed using all traditional construction methods that would remove all vegetation. The All-Mowing Alternative would involve mowing the solar development areas in order to maintain vegetation. The Hybrid Alternative, identified by the BLM as the preferred alternative, includes mowing on 65 percent of the solar array area and the use of traditional construction methods on the remaining 35 percent. Desert tortoise would be reintroduced into mowed areas when construction is complete under the Hybrid Alternative or All-Mowing Alternative.

We commend the BLM for recognizing that there are key resource constraints associated with the Gemini Project site and for developing alternatives that seek to avoid or reduce various resource conflicts. We encourage the BLM and the Applicant to continue to meet with the EPA, U.S. Fish and Wildlife Service, U.S. National Park Service, and U.S. Army Corps of Engineers to optimize the project design such that it maximizes avoidance of critical areas and minimizes impacts to sensitive resources to the greatest extent feasible while meeting energy goals. In addition, the EPA recommends that the BLM continue to work with the Clark County Department of Air Quality to ensure that cumulative air quality impacts are reduced as much as possible and dust suppression is monitored. Given the proposed

A1-1

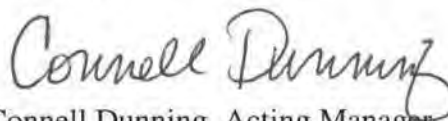
A1-2

Project's large footprint and potential hydrological impacts, the EPA also recommends additional considerations regarding flood management, maintaining naturally functioning hydrology, and avoiding impacts to downstream waters. Through the attached detailed comments, the EPA provides further description of these recommendations, and others, for the BLM to consider as the Final Environmental Impact Statement is being prepared.

Effective October 22, 2018, the EPA no longer includes ratings in our comment letters. Information about this change and the EPA's continued roles and responsibilities in the review of federal actions can be found on our website at: <https://www.epa.gov/nepa/epa-review-process-under-section-309-clean-air-act>.

The EPA appreciates the opportunity to review this DEIS. When the FEIS is released for public review, please send one hard copy and one CD to the address above (mail code: TIP-2). If you have any questions, please contact me at 415-947-4161, or contact Ann McPherson, the lead reviewer for this project. Ms. McPherson can be reached at 415-972-3545 or mcpherson.ann@epa.gov.

Sincerely,



Connell Dunning, Acting Manager
Environmental Review Branch

Enclosure: U.S. EPA Detailed Comments

Cc via email: Carla Wise, U.S. Fish and Wildlife Service
Roy Averill-Murray, U.S. Fish and Wildlife Service
Lisa Gibson, U.S. Army Corps of Engineers
Lara Rozzell, U.S. National Park Service
Shibi Paul, Clark County Department of Air Quality

Project Design

According to the Draft Environmental Impact Statement, the project goal is to produce approximately 690 megawatts on 7,100 acres to meet energy demand in Nevada and/or California. As proposed, the Gemini Solar Project would require 10.3 acres of land per MW. Recent advances in technology and efficiency may allow the Applicant and the Bureau of Land Management to continue to refine the project design and reduce the overall acreage needed to achieve MW goals, as evidenced by other recently proposed solar projects, thereby reducing impacts. For example, the Desert Quartzite Solar Project^{1, 2} was proposed as a 300 MW photovoltaic project in 2015 but advances in PV technology will now allow the generation of up to 450 MW on the same 3,770 acres footprint. In addition, the Edwards Air Force Base Solar Project³ proposes to support a 750 MW project on 4,000 acres (5.3 acres per MW); Eagle Shadow Mountain⁴ proposes a 300 MW project on 2,200 acres (7.3 acres per MW); and the Crimson Solar Project proposes a 350 MW project on 2,500 acres (7.1 acres per MW) or 2,200 acres (6.3 acres per MW). According to the DEIS, solar modules may include bifacial panels that absorb light from both sides of the panels – including energy reflected up from the ground surface – which, if used, would further increase the efficiency, resulting in less land required to construct a 690 MW project.

Per mitigation measure MM WILD-1, all disturbance areas shall be refined and designed to the minimum size needed to safely and legally operate the facility and the Applicant will provide a revised Project footprint based on additional engineering design that will be reviewed and approved by the BLM prior to issuance of a Notice to Proceed for construction (Appendix H, pg. ix). The EPA encourages avoidance of the most sensitive resources as project design refinements lead to a reduced footprint. As the Applicant and the BLM work to refine the project footprint, please consider the following recommendations in the Final Environmental Impact Statement.

Recommendations:

Should the BLM and the Applicant determine that the Gemini Solar Project can meet the 690 MW goal while requiring fewer acres of disturbance, the EPA recommends that the FEIS identify additional design refinements that, when implemented, would reduce resource impacts. Consider design options that avoid areas with greatest densities of Nye milkvetch, threecorner milkvetch, and desert tortoise, as well as areas prone to flooding. Consider the use of bifacial panels which would further increase the efficiency of the project and result in lower land requirements.

Air Quality

The Gemini Solar Project is located in the southeastern Mojave Desert in an area designated as unclassified or in attainment for all air pollutants. The DEIS states that during construction, maximum ambient concentrations of pollutants would exceed the National Ambient Air Quality Standards and

¹ <https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?method=dispatchToPatternPage¤tPageId=99127>

² Desert Quartzite Alternatives include: Proposed Action (450 MW, 3,770 acres, 8.4 acres/MW); Resource Avoidance Alternative (450 MW, 2,782 acres, 6.2 acres/MW – thin-film technology); and Reduced Project Alternative (285 MW, 2,047 acres 7.2 acres/MW).

³ June 2019 Draft Environmental Impact Statement: <https://saoprceqap001.blob.core.windows.net/213038-2/attachment/XH4jl78N9Ph0L02mjF2Or96jcz5VEqocffE53e1BgjBanwHHxg3PpeMLtx9-gTy9odIEzuCFyErUBxrN0>

⁴ July 2019 Draft Environmental Impact Statement: https://www.esmsolareis.com/uploads/1/2/1/8/121814368/esm_solar_project_deis_-_volume_1_7-3-19_2_.pdf

State Ambient Air Quality Standards daily emission thresholds for PM₁₀, PM_{2.5}, and 1-hour NO₂, but with implementation of mitigation measures, the maximum concentrations would be reduced below the NAAQS/SAAQS for all pollutants and averaging periods, except for the 1-hour NO₂ and 24-hour PM₁₀ (pg. 3-101).

Air quality impacts from Gemini Solar Project could be further exacerbated by the concurrent construction and operational emissions from nearby ongoing and reasonably foreseeable energy projects, as seen in Table 3.0-2 and Figure 3.0-2. However, the DEIS does not include an estimated quantification of air impacts from nearby projects, such as the Eagle Shadow Mountain Project, included in Table 3.0-2. Two additional large solar projects – Arrow Canyon Solar and Southern Bighorn Solar & Storage Center – were recently announced⁵ and are not included in Table 3.0-2 or Figure 3.0-2. The EPA recommends that the BLM identify additional measures in the FEIS to ensure direct, indirect, and cumulative air quality impacts are analyzed, disclosed, and mitigated.

Recommendations:

Revise Table 3.0-2 and Figure 3.0-2 to include Arrow Canyon Solar and Southern Bighorn Solar and Storage Center and provide an estimate of emissions from these, and any other neighboring projects that will be constructed during 2020-2023, to better understand the Gemini Solar Project contributions to cumulative air impacts.

Coordinate with the Clark County Department of Air Quality to develop a phased construction schedule for Gemini, and other projects expected to undergo construction concurrently, to comply with local, state and federal air quality regulations. Identify additional mitigation measures that may be needed if the project would affect permitting of other projects.

Install real-time PM₁₀ dust monitoring equipment, like that installed at solar facilities in southern California (e.g. Desert Sunlight), to monitor the construction and operational phases of the project. In the absence of monitoring equipment, identify what type of field monitoring would be conducted and clarify how the BLM would ensure that performance standards are met.

Water Resources – Safety, Flood Management, and Downstream Impacts

The potential damage that could result from project-related disturbance to natural washes includes alterations to the hydrological functions that natural channels provide in arid ecosystems, adequate capacity for flood control, energy dissipation, and sediment movement, as well as impacts to valuable habitat for desert species. Clearing, grading, and compaction in preparation for construction of the solar arrays and access roads could affect drainages and ephemeral washes within the proposed Project area.

According to the DEIS, impacts to incised and functional drainages would be reduced as fill of jurisdictional drainages would be avoided except for access road crossings, utility trenches, posts, and installation of erosion control measures (pg. 3-41). The DEIS concludes that drainages would be left mostly unaltered during construction, except for utility/road crossings, and an occasional solar panel post and that these crossings will not affect the functions of the drainages (pg 3-33). Based on information from the U.S. Army Corps of Engineers,⁶ we understand that up to 9,035 pilings (6 x 4 inches) could be placed into ephemeral drainages greater than 3-feet wide. In addition, tracker systems⁷

⁵ <https://www.solarpowerworldonline.com/2019/06/nv-energy-announces-1-2-gw-of-new-solar-and-590-mw-of-energy-storage-coming-to-nevada/>

⁶ <https://www.permits.performance.gov/section-404-clean-water-act-72>

⁷ Solar Partners XI, LLC, March 2019, Plan of Development Gemini Solar Project N-84631.

may include concrete posts 18 x 24 inches in diameter or driven posts 6 to 8 inches. The DEIS does not address the potential secondary effects of the placement of posts within waters. Additional information is needed to assess the direct and secondary adverse impacts to waters associated with: 1) the placement of aggregate base or concrete within waters for the construction of road crossings; 2) bank stabilization activities; 3) fencing; and 4) downed posts and solar panels during high velocity storm events.

Recommendations:

Characterize the functions of aquatic features, such as washes, on the proposed Project site. Discuss the direct and secondary impacts to waters from pilings, road crossings, stream bank stabilization and fencing. Evaluate the cumulative impact of the crossings and pilings on washes and their potential to alter flow and cause erosion and describe measures to maintain hydrology.

Consider mitigation opportunities to compensate for the 0.78 acres impacted under the Clean Water Act Section 404. Possible mitigation opportunities could include enhancement projects in the watershed, such as cattle exclusion from drainages, rehabilitation of waters from damaging off-road vehicle use or removal of invasive plants. Opportunities to contribute funds to BLM restoration/enhancement projects may also exist.

Floodplain Management

Planning based on the 100-year flood zone may not be sufficient to both protect the project and avoid environmental impacts. As noted in the DEIS, a large flash flood in September 2014 resulted in the washout of I-15 where the California Wash crosses under the freeway, approximately 6 miles north of the Project boundary. The DEIS concludes that such events are anticipated to be rare, with a 1 percent chance per year. The Federal Emergency Management Agency, in its guidance document “Further Advice on Executive Order 11988 – Floodplain Management” states that “in light of increasing flood damages occurring outside of the designated 100-year floodplain, it may be appropriate to consider using a higher flood standard for proposed activities which are funded, either directly or indirectly, by the federal government.” FEMA also identifies Power Generating Stations as possible critical facilities⁸ and states that “According to Executive Order 11988, Floodplain Management, Federal agencies must conduct rigorous alternative site evaluations and meet higher design standards before funding, leasing, or building critical facilities in the 0.2-percent-annual-chance flood hazard area.”

According to the DEIS, the West Tributary, California Wash, and East Washes 1, 2, and 3 would require remapping of post-construction flows under FEMA (pg. 3-34). Under post-development conditions, flows⁹ through the California Wash breakout zone in development areas B & C could experience flow depths up to 3.5 feet deep. It is estimated that the main branch of the California Wash has conveyance capacity equivalent to roughly a 10-year flood event (pg. 3-35); hence, all flows within the California Wash overtop the Valley of Fire Road. The DEIS indicates that a collector channel/berm and detention basin are included as part of the Proposed Action to capture runoff, in part to reduce any increase in peak runoff flow and flooding/overtopping at the Valley of Fire Road. It is unclear, however, where exactly overtopping occurs and if it occurs in multiple locations due to flooding from the West Tributary as well as the California Wash. For the Hybrid Alternative, the DEIS indicates that no berms or channels that could impact desert tortoise will be used; however, it does not indicate whether a detention basin will be constructed.

⁸ FEMA Fact Sheet “Critical Facilities and Higher Standards”. Available: https://www.fema.gov/media-library-data/1436818953164-4f8f6fc191d26a924f67911c5eaa6848/FPM_1_Page_CriticalFacilities.pdf

⁹ Berger, Louis, March 2019, Conceptual Drainage Report Gemini Solar Project.

To minimize the extent of possible damage to the solar facility from breakout overland flows, MM WR-1 requires solar panels and electrical equipment be elevated above the 100-year flood depth (approximately 3 feet) and foundations be designed to withstand scour (pg. 3-36). The Conceptual Drainage Report also advises that buildings and substations should not be constructed in these areas. According to the DEIS, approximately 1 to 1.5 feet or 2 to 2.5 feet of space would remain between the bottom of the panel and ground depending on the alternative and site conditions (pg. 2-9).

Recommendations:

Include a project site map that indicates the drainages that will be avoided and include wide buffers for larger drainages so the channels may adjust to the new hydraulic conditions without the need for major human-made structures. Clarify whether a collector channel/berm and stormwater detention basin are components of the Hybrid Alternative, as proposed in the DEIS or the Conceptual Drainage Report.

A1-18

Discuss the anticipated extent and depth of overland flows through the development areas given a 500-year flood event, as compared to a 100-year event. Compare the depth of overland flow in the California Wash breakout zone in areas B & C for 100-year and 500-year events. Include figures illustrating the location(s) where flooding/overtopping would occur and discuss the depth of flooding on the Valley of Fire Road during a 100-year event, pre-and post-development, and consider whether design modifications or road improvements are needed.

A1-19

Confirm in the FEIS that all substations, switchyards, and buildings areas are outside of the 500-year floodplain, consistent with FEMA guidance¹⁰ and describe how essential equipment would be protected from flooding. Identify if battery systems and power conversion stations (inverters) will be elevated in areas with overland flows and if solar panels can be elevated above the 100-year flood depth – including depths up to 3.5 feet in the California Wash breakout zone – or if panels will be limited to 2-2.5 feet above the ground. Discuss if underground cable/equipment located in trenches in the solar arrays would be impacted if there were substantial flooding due to overland flows. Consider avoiding placement of structures in the California Wash breakout zone in areas B & C.

A1-20

Discuss the need for remapping post-construction flows under FEMA (West Tributary, California Wash, and East Washes 1, 2, and 3).

A1-21

Downstream Impacts and Impaired Waters

As noted in the DEIS, the Muddy River is considered impaired, and is on Nevada's 303(d) list for exceeding state water quality standards (pg. 3-30). There may be indirect impacts to downstream structures, including Moapa Reservation infrastructure, and to tributaries downstream of the site leading to the Muddy River, as well as indirect impacts to the Muddy River itself. Indirect effects could include changes in sediment transport to the Muddy River and increases in volume/velocity of stormwater.

A1-22

Recommendations:

Based on updated drainage, sedimentation and stormwater plans, identify indirect impacts to the Muddy River or its tributaries downstream of the site leading to the Muddy River and discuss the monitoring protocols and the water quality thresholds to be used to ensure the Muddy River is not further impaired due to the proposed Project. Confirm that the construction and operation of

A1-23

¹⁰ Federal Emergency Management Agency, 1987, *Further Advice on Executive Order 11988 Floodplain Management*. Available: <https://www.fema.gov/media-library/assets/documents/3430>

the proposed Project will not have downstream impacts on residents or structures, including the Moapa Paiute Travel Plaza and the Moapa River Indian Reservation.



Fencing

The security perimeter fence in mowed areas would be raised approximately 8 inches, allowing movement of desert tortoises. This opening will also allow overland hydrologic flows to pass through the site more easily, which is critical in the project setting where storms can be sudden and severe, resulting in flash flooding. It is not clear, however, how fencing could impede or redirect flows in other areas where the bottom of the fence will not be lifted.

A1-24

Recommendations:

Include a description of the potential effects of fencing on drainage systems and consider incorporating best practices from other projects assessing fencing impacts on hydrology and infrastructure. Identify how fencing proposed for this project would maintain functioning hydrologic flows and not impede or redirect flood flows, especially around traditional areas of development that are prone to overland flow – including the California Wash breakout zone in development areas B & C. Discuss the use of break-away fencing in strategic locations to allow for adequate flows during storm events.

A1-25

Biological Resources

The DEIS states that the proposed Gemini Solar Project site is situated in a region that has the highest known densities of desert tortoise in the Northeastern Mojave Recovery Unit, which is the only recovery unit where the population of desert tortoises is currently increasing. The Proposed Action, if undertaken, would result in the ‘take’ of an estimated 215 adult tortoises and 900 or more juveniles located on site because there are no places within the NMRU where the tortoises can be moved (pg. 3-82). The Hybrid Alternative, however, will allow 183 of the 219 adult tortoises that must be moved during construction to be reintroduced in mowed areas on the project site. An additional 36 tortoise will be “distantly translocated” to an area south of development areas B and D (pg. 3-88). Continued consultation with the U.S. Fish and Wildlife Service and the Nevada Department of Wildlife will play an important role in informing the BLM’s decision about which alternative to approve and what commitments, terms, and conditions must accompany that approval. We understand that more details about the translocation of tortoises will be presented in the Desert Translocation Plan and the Biological Assessment for the Gemini Solar Project, which have not yet been publicly released. We also understand that the Biological Opinion for this project has not yet been finalized. While we defer to the BLM’s coordination with the USFWS and NDOW on matters pertaining to species and habitat protection, we offer the following suggestions to help clarify potential impacts to biological resources in the FEIS.

Recommendations:

Provide an update on the consultation process with the USFWS and NDOW. Summarize and append any relevant documents associated with the ESA Section 7 consultation process, including the Biological Assessment, Biological Opinion, Desert Tortoise Translocation Plan, and Desert Tortoise Long-Term Monitoring Plan. Discuss additional mitigation and monitoring measures that result from consultation to protect sensitive biological resources. Include specific timeframes and metrics of success to evaluate successful translocation of tortoises. Describe how the area surrounding the proposed Project – which will serve as new habitat for the translocated tortoises – will serve as suitable habitat into the foreseeable future.

A1-26

A1-27

A1-28

A1-29

Vegetation

According to the DEIS, the Hybrid Alternative proposes a mix of development methods: 1) traditional development methods such as disk and roll that would, largely, remove all native vegetation on approximately 2,500 acres, and 2) mowing, which would leave vegetation and natural land contours in place on the remaining 4,600 acres. Native vegetation is expected to rebound and regrow after construction is complete in areas that are mowed, but it is not yet known how mowing would impact the health and vigor of the native vegetation, or how shade from the solar panels would affect long-term growth (pg. 3-60). Where vegetation is completely removed in areas of traditional development, restoration would take decades or longer before these areas return to functional habitat.

While development areas C, D, and E contain the greatest density of threecorner milkvetch, development area A contains the greatest density of Nye milkvetch. Under the Hybrid Alternative, MM VG-2 states that there shall be no disk and roll in development areas C, D, and E (Appendix H, pg. vii). Instead, these areas will be developed using drive and crush methods, with vegetation allowed to regrow in order to preserve the sandy soils where habitat for the threecorner milkvetch occurs. In other places, however, the DEIS states that MM VG-2 requires drive and crush be used instead of disk and roll in all traditional development areas (pg. 3-66). According to the Alternatives Report, the Hybrid Alternative would not involve construction in development area F or in the portion of development area C with the highest known densities of threecorner milkvetch; however, the DEIS does not reflect this information for area C. According to the DEIS, traditional development methods would be used in the western portion of development area A, where the largest known population of Nye milkvetch in Nevada is located, potentially resulting in severe impacts.

Recommendations:

Include additional figures that illustrate where disk and roll versus drive and crush will be used in traditional development areas in the FEIS. Include the Site Restoration Plan and Site Decommissioning Plan in the FEIS or post the documents on the BLM's ePlanning website.

A1-30
A1-31

Clarify whether MM VG-2 applies to all traditional development areas in the Project site – including areas A and B – or just traditional development areas in C, D, and E.

A1-32

Analyze and disclose potential impacts to Nye milkvetch in development area A (Table ES-2). Consider identifying additional “no-development zones” and avoiding construction/disturbance in areas that contain the greatest densities of threecorner milkvetch and Nye milkvetch.

A1-33

Soil Impacts

According to the DEIS, approximately 117 acres of biocrust and 143 acres of desert pavement would be impacted by the Gemini Solar Project under the Hybrid Alternative – reduced from the 414 acres of biocrust and 524 acres of desert pavement under the Proposed Action. MM VG-1 states that if the Proposed Action is selected, measures to protect or store biocrust will be identified in the Site Restoration Plan; however, it is not clear how protecting or storing biocrust will occur with the Hybrid Alternative. We also note that the DEIS indicates that that soils on the Gemini Project site have a pH of approximately 8.5 and are corrosive to steel and other metals.

A1-34

Recommendations:

Identify installation techniques that avoid disturbance of existing biocrust and desert pavement and provide measures to protect or store biocrust that are applicable to all alternatives.

A1-35

Clarify the extent that the pH of the soils may impact metal pilings in the Gemini Project area.

A1-36

Discuss what can be done to better protect the metal pilings, if necessary.

A1-37

Old Spanish National Historic Trail

The DEIS states that the BLM and the National Park Service are co-administrators of the Old Spanish National Historic Trail, which transects the valley where the proposed Gemini project is located. We encourage the BLM to continue to work with the NPS to demonstrate how the proposed Project is consistent with the National Trails Systems Act of 1968, including the need to consider the effects of proposed actions on the OSNHT (pg. 3-137). We understand that construction and operation of the proposed Project would result in modern built features across the High Potential Route Segment of the OSNHT that would substantially interfere with the natural and cultural environment of the valley.

A1-38

We note that while voluntary compensatory mitigation (MM NHT-1) in the amount of \$25,000 will support the goals of the Old Spanish Trail Association, we recommend that the FEIS identify mitigation measures to reduce adverse effects to the setting along the trail. We note that the DEIS concludes that, for the Proposed Action, the site is not expected to ever fully recover to pre-disturbance conditions.

A1-39

Recommendations:

Clarify how the proposed project is consistent with National Trails Systems Act of 1968. Identify design modifications or mitigation measures, if any, that can be implemented to avoid or minimize impacts to the OSNHT. Consider the possible purchase of other segments of the OSNHT, with similar values, as a potential mitigation measure.

A1-40

A1-41

Section 368 Energy Corridor of Concern

A Section 368 Energy Corridor of Concern transects the Gemini Project site on the southeastern side and extends through development area D and E. The Applicant proposes to install solar panels on land situated in the Section 368 Energy Corridor – including 375 acres in area D and 3 acres in area E. According to the DEIS, installing solar panels within the corridor would create an incompatible use that prevents future development of energy infrastructure. Under the Preferred Alternative, mitigation would be implemented to avoid or minimize conflicts with the Section 368 energy corridor (pg. 3-13). We understand that the presence of solar panels can cause interference with transmission lines and there may need to be some requisite distance between the corridor and project components.

Recommendations:

Describe the status of the Section 368 energy corridor review. Include updated information and recommendations regarding Section 368 COC (39-113), including what mitigation measures are proposed to avoid or minimize conflicts. Identify what measures can be taken to both allow installation of solar panels within the Section 368 energy corridor and preserve future development of energy infrastructure within the corridor.

A1-42

A1-43

Battery Storage

The DEIS indicates that the project would include 425, 5 MW-hr, 4-hour battery systems that would be installed next to each inverter (pg. 2-3). The battery systems would allow the facility to continue supplying energy to the grid for up to four hours in the evening after sundown.

Recommendations:

Clarify the total number of acres required for the battery systems and inverters. Include an analysis of the energy needs and associated impacts to air emissions (e.g. for HVAC) and site hydrology for the battery systems.

A1-44

A1-45



Fwd: [EXTERNAL] Gemini Solar Purpose & Need and Alternatives Report

4 messages

----- Forwarded message -----

From: **Brad Hardenbrook** <bhrdnbrk@ndow.org>

Date: Mon, May 20, 2019 at 2:39 PM

Subject: [EXTERNAL] Gemini Solar Purpose & Need and Alternatives Report

To: Herman Pinales <apinales@blm.gov>

Cc: Joe Barnes <jbarnes@ndow.org>, Jasmine Kleiber <jkleiber@ndow.org>

Dear Mr. Pinales,

As a cooperating agency in development of the Draft RMPA/EIS for the proposed Gemini Solar Project, the Nevada Department of Wildlife (NDOW) has the following review comments to the Project's Purpose and Need and Alternatives Report dated March 2019.

Purpose and Need: Looks satisfactory

Alternatives Report: The Traditional, Mowing, Hybrid, and No Action alternatives read as we have come to understand them in the previous months of discussions. Both alternatives involving mowing represent two distinct efforts for minimizing impacts to biological resources to which we agree.

Because this is a summary report of alternatives to be included in the Draft RMPA/EIS, understandably not all measures for avoiding or minimizing impacts are expected to be detailed. One example is description on page 1-5 for a lattice tower for meteorological instrumentation. Lattice work is not recommended as it provides perching and nesting subsidies for common ravens and other potential avian predators to the desert tortoise. In keeping with reducing transmission structure impacts to biological resources, all tower structures should be non-guyed monopole design.

At this juncture, the materials provided for review are not in obvious conflict with NDOW guidance, State of Nevada regulations or laws. We look forward to continuing involvement in our capacity as a cooperating agency.

Thank you,

Brad

D. Bradford Hardenbrook

Supervisory Habitat Biologist

NEVADA DEPARTMENT OF WILDLIFE, SOUTHERN REGION



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United States Department of the Interior



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In Reply Refer To:
N-84631
2800 (NVS01000)

APR 29 2019

D. Bradford Hardenbrook
Supervisory Habitat Biologist
Nevada Department of Wildlife, Southern Region
4747 Vegas Drive
Las Vegas, Nevada 89108

Dear Mr. Hardenbrook:

The Bureau of Land Management (BLM) is preparing a Draft Resource Management Plan Amendment (RMPA) and Environmental Impact Statement (EIS) for the proposed Gemini Solar Project (Project). The enclosed alternatives report identifies the alternatives that have been developed for analysis in the RMPA/EIS. These alternatives were developed with comments from the public scoping comment period and working with cooperating agencies to minimize impacts.

The following is Purpose and Need for the Gemini Solar Project.

In accordance with FLPMA, public lands are to be managed for multiple uses that consider the long-term needs of future generations for renewable and non-renewable resources. The BLM is authorized to grant rights-of-way (ROWs) on public lands for systems of generation, transmission, and distribution of electrical energy (§ 501 [a][4]). Taking into account the BLM's multiple-use mandate, the BLM's purpose and need for this action is to respond to the ROW application submitted by the Applicant under Title V of FLPMA (43 United States Code [USC] § 1761) (serial number N-84631) to construct, operate, maintain, and decommission the Project. The BLM will decide whether to deny the proposed ROW, grant the ROW, or grant the ROW with modifications, and approve the RMPA. The BLM may include any terms, conditions, and stipulations it determines to be in the public interest and may include modifying the proposed use or changing the location of the proposed facilities (43 Code of Federal Regulations [CFR] 2805.10(a)(1)). Several other agencies have been identified as cooperating and participating agencies. The purpose and need for each of these agencies is to respond to authorization requests for permits and approvals to construct and operate the Project.

We ask that you review both the purpose and need and the alternatives (Enclosure 1) that will be used in the Draft RMPA/EIS and provide your concurrence that the following action will not be in conflict to your agency guidance, regulations and laws. Please provide your comments by letter or email by May 20, 2019.

If you have further questions regarding the project, please feel free to me at 702-515-5284 or apinales@blm.gov.

Sincerely,

Augrelío Herman Pinales
Energy and Infrastructure Project Manager

Enclosure



Gemini Solar Project **Alternatives Report**

March 2019

PANORAMA
ENVIRONMENTAL, INC.

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Gemini Solar Project Alternatives Report

March 2019

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ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
BLM	Bureau of Land Management
BMPs	best management practices
BSBCB	Bitter Springs Back Country Byway
CFR	Code of Federal Regulations
CPV	Concentrated Photovoltaic
COC	Corridor of Concern
CEQ	Council on Environmental Quality
DOI	Department of the Interior
FLPMA	Federal Land Policy and Management Act of 1976
EIS	Environmental Impact Statement
gen-tie	generation tie
I-15	Interstate-15
kV	kilovolt
MW	megawatt
MWac	megawatts alternating current
NEPA	National Environmental Policy Act
NREL	National Renewable Energy Laboratory
NRHP	National Register of Historic Places
O&M	operation and maintenance
OHV	off-highway vehicles
OSNHT	Old Spanish National Historic Trail

ACRONYMS AND ABBREVIATIONS

PV	photovoltaic
RMP	Resource Management Plan
ROW	right-of-way
SWPPP	stormwater pollution prevention plan
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

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1.1 NEPA REQUIREMENTS FOR ALTERNATIVES

1.1.1 Consideration of Alternatives

According to the Council on Environmental Quality's (CEQ) National Environmental Policy Act (NEPA) Regulations (40 Code of Federal Regulations [CFR] 1502.14), an Environmental Impact Statement (EIS) must present the environmental impacts of a proposed action and alternatives in comparative form, defining the issues so they may be readily understood by the public and decision makers, and contributing to a basis for an informed and reasoned decision. The alternatives section shall:

- Rigorously explore and objectively evaluate reasonable alternatives. For alternatives that were eliminated from detailed study, briefly discuss the reasons they were eliminated.
- Devote substantial treatment to each alternative considered in detail including the Proposed Action so that reviewers may evaluate their comparative merits.
- Include reasonable alternatives not within the jurisdiction of the lead agency.
- Include the alternative of no action.
- Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
- Include appropriate mitigation measures not already included in the Proposed Action or alternatives.

The CEQ has stated that "[r]easonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense rather than simply desirable from the standpoint of the Applicant" (CEQ, 1983).

1.1.2 Purpose and Need

In accordance with the Federal Land Policy and Management Act of 1976 (FLPMA), public lands are to be managed for multiple uses that take into account the long-term needs of future generations for renewable and non-renewable resources. The Bureau of Land Management (BLM) is authorized to grant rights-of-way (ROWs) on public lands for systems of generation, transmission, and distribution of electrical energy (Section 501[a][4]). Taking into account BLM's multiple-use mandate, BLM's purpose and need for this action is to respond to the right-of-way application submitted by Solar Partners XI under Title V of FLPMA (43 United States Code § 1761) for a ROW grant to construct, operate, maintain, and decommission a solar generation power plant and ancillary facilities on approximately 7,100 acres (2,873 hectares) of BLM land in Clark County, Nevada, (Project) in compliance with FLPMA, BLM ROW

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regulations, the BLM NEPA Handbook, Department of Interior (DOI) NEPA regulations, and other applicable federal and state laws and policies.

The BLM would decide whether to deny the proposed right-of-way, grant the right-of way, or grant the right-of-way with modifications. The BLM may include any terms, conditions, and stipulations it determines to be in the public interest and may include modifying the proposed use or changing the route or location of the proposed facilities (43 CFR 2805.10(a)(1)). In the decision process, the BLM must consider how their resource management goals, objectives, opportunities, and/or conflicts relate to this non-federal use of public lands.

1.1.3 Environmental Considerations and Constraints

NEPA does not explicitly require that alternatives reduce environmental effects of the Proposed Action. NEPA, however, directs the lead agency to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources...” (NEPA Sec102(2)(E)). The H-1790-1 BLM NEPA Handbook identifies that alternatives could include, “The proponent’s proposal with additional or different design features recommended by the BLM to reduce environmental effects.”

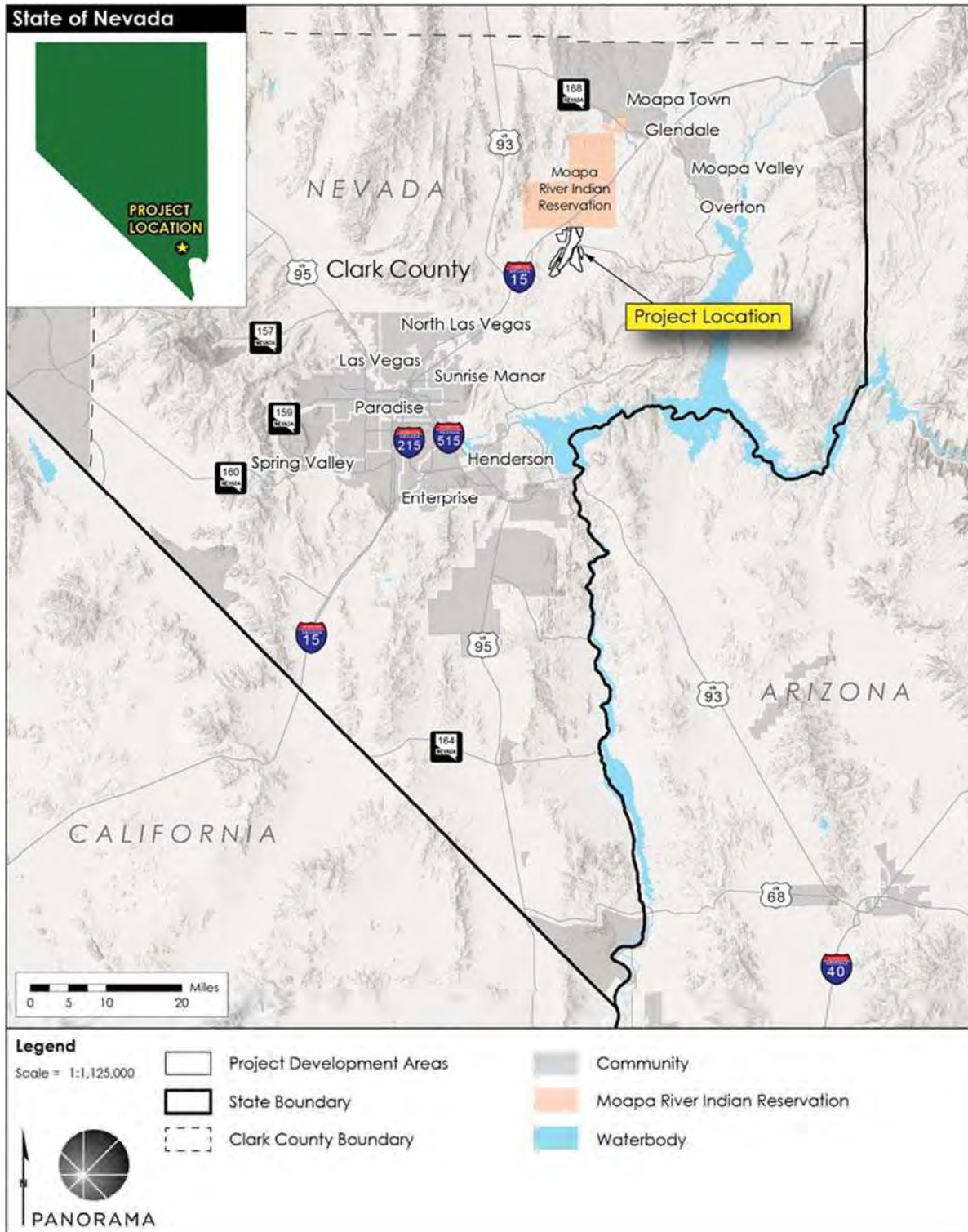
1.2 SUMMARY OF PROPOSED ACTION

1.2.1 Project Location

The Project is located on public land administered by the BLM in the northeastern portion of the Mojave Desert; approximately 33 miles (53 kilometers) northeast of the Las Vegas metropolitan area, in an unincorporated area of Clark County, Nevada (refer to Figure 1). The Project site is situated immediately south of the Moapa River Indian Reservation and less than 0.5 mile (0.8 kilometer) southeast of Interstate 15 (I-15) within the *Piute Point* and *Dry Lake* United States Geographical Survey 7.5-minute topographic quadrangles. A larger area, shown in Figure 2, encompassing 10,670 acres (4,318 hectares), was surveyed in order to define alternative configurations of approximately 7,100 acres (2,873 hectares) that reduce environmental effects. The solar field is divided into development areas, labeled A through G. The Project is located within Mount Diablo Meridian, Nevada, T.17S., R.64E., secs. 10-15, 25, and 36; T.17S., R.65E., secs. 7-9, 16-21, 28-33; T.18S., R.64E., secs. 1 and 2; and T.18S., R.65E., secs. 4-5. All components of the Project are on federal lands administered by the BLM under the 1998 Las Vegas Resource Management Plan (RMP) (BLM, 1998a).

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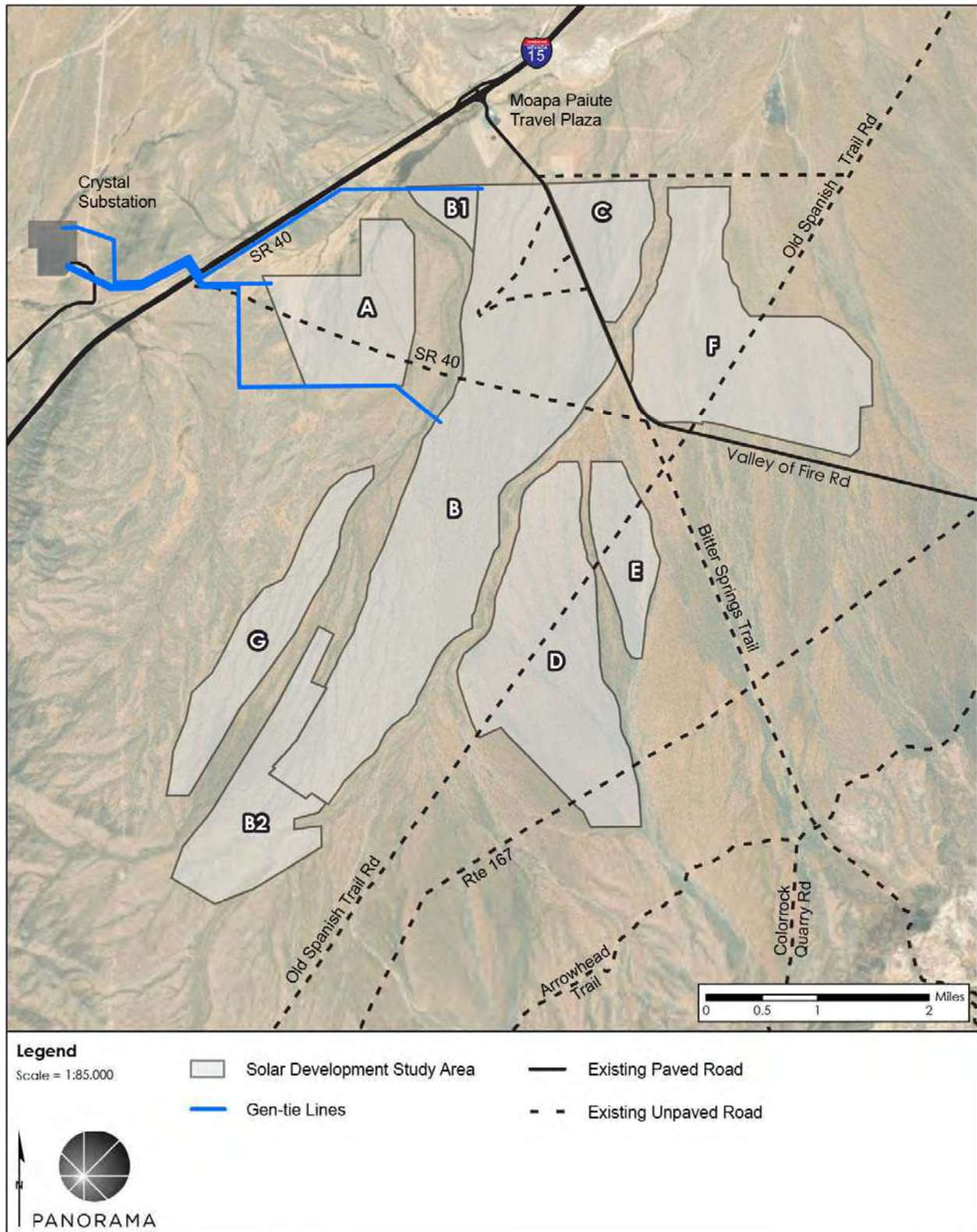
Figure 1 Project Location Map



Sources: (Louis Berger Group , 2018; Esri, 2006; USGS, 2017; The National Map and USGS, 2017; Ventyx, 2010; Tele Atlas, 2010a; Tele Atlas, 2010b)

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Figure 2 Project Development Areas



Source: (Louis Berger Group , 2018; USDA-FSA-APFO, 2017; Clark County Nevada GIS Management Office, 2018)

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1.2.2 Project Components and Impact Acreage

Solar Partners XI, LLC filed an application (serial number N-84631) to construct, own, operate, and decommission the Project, consisting of a nominal¹ 690-megawatt alternating current (MWac) solar photovoltaic (PV) power generating facility on approximately 7,100 acres (2,873 hectares). The development areas are shown in Figure 2. The Project components are described below.

Solar Field

The solar field would be constructed to include:

- Solar array blocks consisting of solar PV modules mounted on single-axis, horizontal tracker mounting systems supported by driven steel posts or other embedded foundation design located within development areas;
- The type of PV modules would be either traditional panels, which capture sunlight from one side of the panel, or bifacial panels, which can absorb light from both sides of the panels, including energy reflected up from the ground surface;
- Solar panels with a maximum height of 12 feet (3.7 meters) above the ground surface. When the panels are in their most vertical position, approximately 1 to 1.5 feet (0.3 to 0.5 meter) of space would remain between the bottom of the panel and the ground, depending upon site conditions such as flood flow depths
- Integrated energy storage system (battery system) consisting of approximately 425, 5 megawatt-hour 4-hour battery systems with approximately 53,550 individual batteries enclosed in a container and installed adjacent to the direct current collection system and Power Conversion Stations;
- Direct current collection system and Power Conversion Stations to collect power from the array blocks with one PCS for approximately every four array blocks;
- Overhead and underground 34.5 kilovolt (kV) AC collection system to convey electricity from the Photovoltaic Combining Switchgear to the substations;
- On-site microwave and wireless systems to collect and send data to a supervisory control and data acquisition system; and
- One meteorological tower (steel lattice), approximately 30 feet (9 meters) high, mounted on concrete foundations, installed at the northern boundary of the solar development area near the operation and maintenance (O&M) facilities.

Infrastructure and Ancillary Systems

The infrastructure and ancillary systems that would be constructed to support the Project include:

¹ Nominal power refers to the nameplate or peak capacity of photovoltaic system

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- A roadway system consisting of an internal grid and perimeter roadways, graded and covered in aggregate (4 inches [10 centimeters] in depth) or compacted soil (12 inches [30 centimeters] of recompacted native material);
- Access roads along project generation tie (gen-tie) lines, with roads required for use by NV Energy to be a minimum 20 feet (6 meters) wide with an all-weather (gravel) surface;
- A 10-foot (3-meter) wide firebreak;
- A 2-acre (0.8 hectare) O&M area that would accommodate an O&M building, warehouse, parking area, and other associated facilities such as above ground water storage tanks and delivery pipelines, septic system, security fencing, signage, lighting, and a flagpole;
- Project security using a combination of perimeter security fencing, controlled access gates, on-site security patrols, lighting, electronic security systems, and/or remote monitoring;
- Desert tortoise exclusion fencing around the Project perimeter;
- Drainage control structures including a detention basin, soil cement channels, and riprap or cement bank protection/berms;
- An option for an on-site water well, or a water pipeline extending from the Moapa Paiute Travel Plaza to the Project site, or an alternate option for trucking water; and
- Four, temporary on-site water storage ponds and pump systems of varying sizes during construction.

Gen-Tie/Transmission System

New power line systems that would be constructed to support the Project include:

- Up to three additional on-site substations hosting on-site ringbus substations;
- Up to three gen-tie lines extending from the Project substations to NV Energy's Crystal Substation, consisting of two 230 kV circuits and one 500 kV circuit (right-of-way width of 100 feet [31 meters] for 230 kV lines and 200 feet [61 meters] for 500 kV lines where two lines converge into one corridor, the ROW is 300 feet [91 meters]); and
- Redundant telecommunication systems and cables installed in tandem with the gen-tie lines as required by NV Energy Large Generator Interconnection Agreement, as well as on-site microwave and wireless systems.

Table 1 summarizes the impact acreage of the Project, by development area. A detailed description of the Project components, as well as a description of the Project's construction is provided in the Plan of Development (Solar Partners, XI, LLC, 2019).

1.2.3 Primary Resource Constraints

As previously stated, NEPA requires consideration of alternatives that addresses alternative uses of available resources. Based on the environmental review for the project, the key resource impacts or constraints are summarized in Table 2. Note that the table focuses on the primary resources of concern and is not a comprehensive list of impacts on all resources addressed in the NEPA analysis. Figure 3 is a map showing the various resource constraints.

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Table 1 Summary of Permanent Impact Acreages for the Proposed Action by Component

Disturbance Type	Disturbance, Acres (Hectares)	Notes
Permanent Disturbance		
Entire Solar Facility	7,071 (2,862)	690-MWac PV solar facility
Solar Arrays (Traditional Development)	6,810.9 (2,756.3)	Includes the solar PV panels, steel table frames, trackers, and posts
O&M Building	2.1 (0.85)	Includes the O&M building, parking, and water tank storage, all within solar facility footprint
Substations	7.1 (2.9)	Each of the three substations occupies approximately 2.4 acres (0.97 hectare) within the solar facility footprint
Firebreak	42.2 (17.1)	10-foot (3-meter) wide firebreak outside the perimeter fence
Perimeter Road	84.2 (34.1)	Up to 20 feet (6 meters) wide, graded and covered with gravel base or compacted soil. The access roads are included in the solar facility footprint
Internal Access Roads for Solar Field and Utility Corridor	62.9 (25.5)	Up to 20-feet (6 meters) wide with a 30-foot (9-meter) adjacent utility corridor (20 feet [6 meters] on one side and 10 feet [3 meters] on the other), graded and covered with gravel base or compacted soil. The access roads are included in the solar facility footprint
Water Ponds	4 (1.6)	Four temporary ¹ water ponds would be constructed in development areas A, B, and D.
Drainage Features	31.6 (12.7)	Includes channels (2.26 miles [3.64 kilometers]), a 15.4-acre (6.2 hectares) detention basin, and a spillway within the solar facility footprint
Berms	11.2 (4.5)	3.43 miles (5.52 kilometers) of berms within the solar facility footprint
Equipment Area	14.7 (5.9)	425 equipment areas, which include batteries (53,550 individual batteries), inverters, and medium voltage transformers within the solar facility footprint
Gen-tie and Access Roads to Gen-tie	25.9 (10.5)	Gen-tie foundations assumed to fall within acreage for access roads
Total	7,097 (2,872) ³	
Temporary Disturbance (granted through a short-term ROW, if outside the project ROW area) ²		
Gen-tie structure, laydown, staging, and installation	37.7 (15.3)	Gen-tie laydown and staging, 200 feet by 200 feet (61 meters by 61 meters) at up to 40 poles, outside the solar facility fence
Gen-tie line conductor stringing	14.8 (6.0)	Multiple pulling sites for each gen-tie line where direction changes sharply; 100 feet by 500 feet (30 meters by 152 meters)

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Disturbance Type	Disturbance, Acres (Hectares)	Notes
Total	53 (21)	
GRAND TOTAL	7,150 (2,893)	
<hr/>		
<p>1. Although the water ponds are temporary and would be removed following construction, the impact would be permanent.</p> <p>2. Overlap with gen-tie access roads was netted out from these temporary impacts as access roads are considered under permanent impacts.</p> <p>3. If selected as the water source, the water pipeline to Moapa Paiute Travel Plaza would be constructed in an already disturbed area along Valley of Fire Road and would not increase permanent disturbance.</p>		
<hr/>		

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Table 2 **Summary of Key Resource Constraints Identified for the Proposed Action**

Resource	Summary of Impacts or Resource Constraints	Development Area where Resource is Present, if Applicable
Biological Resources – Botanical	The Project area includes habitat and known occurrences of the threecorner milkvetch (<i>Astragalus geyeri</i> var. <i>triquetrus</i>), a Nevada fully protected species and on the state Critically Endangered Species List and a BLM special status species.	Habitat and occurrences have been found in development areas C, D and E.
Biological Resources – Desert tortoise	The Project area provides suitable to high quality habitat with high-density desert tortoise populations.	Most areas of the project support desert tortoise, with higher densities through most of development area B and the lower two-third of development area D, as well as the eastern half of development area A.
Biological Resources – Jurisdictional Waters of the United States	Jurisdictional waters of the United States in the form of drainages are found throughout the Project site.	All areas of the Project include jurisdictional drainages.
Water Resources – Floodplains and Drainages	Drainages and washes are found throughout the Project site.	Development areas were identified to avoid the 100-year floodplain, which includes major washes. Areas that could become inundated in a 100-year flood event include the northern half of development area B, and large portions of development areas C, D, and E.
Visual Resources	<p>Most of the Project area has some degree of visual disturbance from existing built environment features such as the Moapa Travel Paiute Plaza, I-15, and the Moapa Solar Project.</p> <p>The Project site, however, is undeveloped and provides scenic views across the desert valley and to the Muddy Mountains and Bitter Springs Backcountry Byway areas to the east of the Project.</p>	<p>The most visually intact areas of the site are development areas D and E, located between the California Wash and the mountains. Due to the substantial incision of the western bank of the wash and from the distance from built features, development areas D and E provide the most scenic values of any of the development areas.</p> <p>The Project would only be visible in the valley. It is visible coming out of the mountains, heading towards I-15, along Valley of Fire Road and Bitter Springs Backcountry Byway, but only once these roads start descending into the valley.</p>

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Resource	Summary of Impacts or Resource Constraints	Development Area where Resource is Present, if Applicable
Recreation – Off-Highway Vehicles (OHV) Use	OHV is allowed along existing roads, trails ² , and washes in the Project area.	Open roads and trails are found in development areas A, B, D and E. Major washes traverse between development areas A and B and B and C/D.
Recreation – Old Spanish Trail/Recreational Trails	<p>Recreational uses in the Project area include hiking, mountain biking, and jeep trails. The primary road through the Project is Old Spanish Trail Road, which is an unpaved and relatively unmaintained road, approximately 10 feet (3 meters) wide, that extends from around Nellis Air Force Base up through the Project and north to Glendale. Another trail along Route 167 connects to the Arrowhead Trail, to the east of the Project.</p> <p>Related to the recreational use, the Congressionally-designated alignment of the Old Spanish Trail is located along the California Wash. Most visitors who come to experience the trail would likely travel along Old Spanish Trail Road.</p>	Development areas D and E primarily impact the Old Spanish Trail Road and Route 167. Old Spanish Trail Road traverses through these development areas.

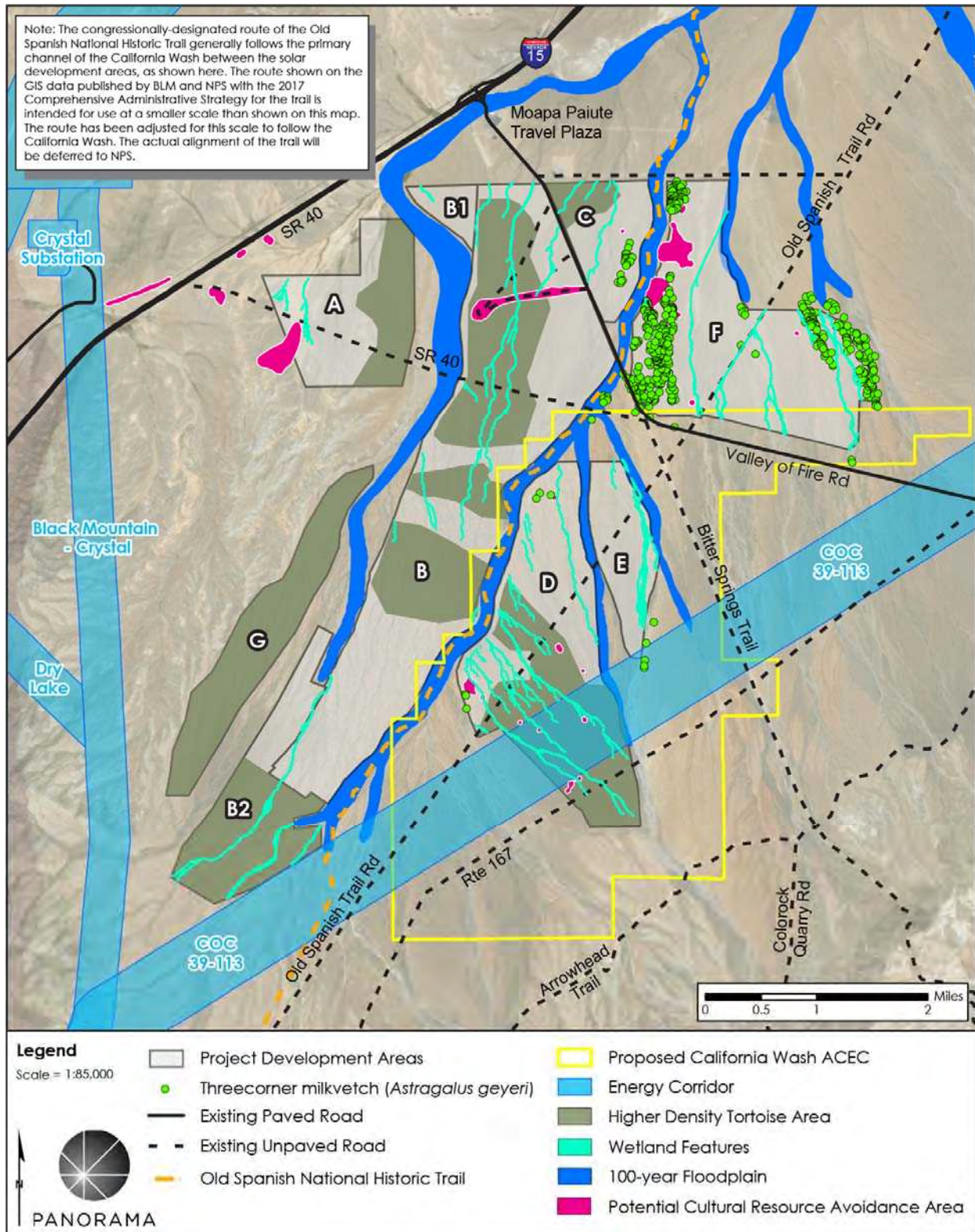
² The term trail is used generally in this document and is intended to mean an existing unmaintained dirt road capable of supporting one or more OHV activities, including motorcycles (single track) or ATV, buggies, or trucks (two track). No BLM-designated trails are located in the Project area. Existing roads and trails in the Project area that are addressed in this document may not be officially recognized or authorized by BLM. The names of some road features were obtained from Google Maps, as no other road names could be found, such as for SR 40, Route 167, and Colorock Quarry Road.

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Resource	Summary of Impacts or Resource Constraints	Development Area where Resource is Present, if Applicable
Cultural Resources – Old Spanish Trail	As a cultural resource, the entire valley was likely historically used as a travel route along the Old Spanish Trail. No traces of the trail that are eligible for listing in the National Register of Historic Places (NRHP) are found within the Project area. That said, the Project would change the undeveloped “feel” of the valley that was historically used by travelers along the Old Spanish Trail.	All development areas.
Cultural Resources – Archaeology and Historic	Some prehistoric and historic resources are found on the Project site.	Significant archaeological resources in development area A must be avoided. Other resources are found in development area C.
Land Use	A Section 368 Energy Corridor that was also identified in the Settlement Agreement as a Corridor of Concern (COC) is located in the Project area. The corridor does not currently include any utilities but is designated for both above ground and underground electric and gas facilities; however, as a COC, development of utilities in this corridor would require more extensive analysis due to natural resource impacts.	The 368 Energy Corridor passes through the lower half of development area D.

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Figure 3 Resource Constraint Map of Surveyed Areas



Sources: (BLM and NPS, 2017; BLM, 2018; Phoenix Biological Consulting, 2018a; Phoenix Biological Consulting, 2018b; BLM, 1998b; Knight & Levitt Associates, 2018; FEMA, 2018)

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2 ACTION ALTERNATIVES

2.1 INTRODUCTION

Each of the action alternatives described here meet the basic purpose and need of the Project and are economically feasible; however, each alternative addresses a different set of environmental constraints or conflicts. This section describes each alternative and provides a comparison of impacts between each alternative and the Proposed Action for key resource conflicts.

The alternatives that were carried forward are based on different solar field development area configurations, as well as different construction methods within the solar field development areas, as described here.

2.2 ALTERNATIVE SOLAR FIELD DEVELOPMENT AREAS – B1, B2, F, AND G

To develop alternatives, several additional areas within the 44,000-acre (17,806-hectare) application area were studied. These additional areas total approximately 3,600 acres (1,456 hectares), and are identified as development areas B1, B2, F, and G (shown in Figure 2). A total of approximately 10,670 acres (4,318 hectares) have been studied in order to develop alternatives that provide a development acreage of approximately 7,100 acres (2,873 hectares) and to avoid resource constraints. The acreage is needed to meet the purpose and need of the Project to develop a 690-megawatt (MW) solar facility.

2.3 ALTERNATIVE CONSTRUCTION METHODS

2.3.1 Traditional Methods

The Proposed Action would be constructed using methods typical for a utility solar development in the Project area, also referred to as “traditional construction methods” or “traditional methods.” These methods include “disk and roll,” where the vegetation is crushed and mixed into the soil using deep disking, then the soil is compacted so that construction equipment can safely traverse the site to construct the solar arrays and infrastructure. The method does not require grading; however, soils are disturbed, root crowns are buried, and the typical dominant desert vegetation (creosote and white burrobush) do not grow back due to the level of compaction of the soils. Under this traditional method of construction, stormwater retention may be required, and periodic erosion repair is needed in the solar field development areas. Soils are compacted, tackifiers are applied, and weeds are managed with herbicides. The method, including best management practices (BMPs) used during construction, are described in detail in the Plan of Development (Solar Partners, XI, LLC, 2019).

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2.3.2 Mowing

An alternative method of site development is proposed that can be applied to each solar development area configuration alternative. The method is known as mowing. Areas that would be constructed through mowing of vegetation, versus “disk and roll” or “traditional methods of construction” would minimize the areas of direct vegetation removal, thereby maintaining the vegetation community and topsoil seed bank for future regrowth and minimizing weed growth. Areas of the solar field subject to mowing would be designed and constructed differently from the areas cleared using traditional methods. The differences are summarized below. Appendix B of this report includes the modified site design drawings for the mowing alternatives.

- Design
 - **Panel heights:** The solar arrays in mowing areas would need to have higher vegetation clearance than is typical, which would increase the total height of the arrays from 12 feet to 14 feet (3.7 to 4.3 meters) tall (24 inches [61 centimeters] taller at the top edge of the panel when the panel is positioned vertically). Vegetation may be trimmed to no less than 18 inches (46 centimeters) tall under justifiable circumstances. The greater height would require approximately 1 to 2 feet (0.3 to 0.6 meter) deeper steel posts to support the solar arrays.
 - **Array Block Configurations and Access Roads:** Array blocks in mowing areas would be consolidated as compared with array blocks for traditional methods, such that less space would be provided between array blocks. Panel spacing would be the same as for traditional methods, which allows light between panels to reach the ground to support plant growth. Internal access roads would be constructed in an east-west alignment approximately every 0.25 mile (0.4 kilometer) to allow for panel maintenance. Access roads would be 15 feet (4.6 meters) wide with every 4th access road 30 feet (9 meters) wide to allow for a utility corridor. For traditional methods, access roads would be 20 feet (6 meters) wide and constructed approximately every 1 mile (1.6 kilometers) in development areas B, D, and E, and every 0.5 mile (0.8 kilometer) in development areas A and C. Access roads in traditional development areas would include a 10-foot (3-meter) buffer on one side of the road and a 20-foot (6-meter) buffer on the other side for utilities. Internal access roads would primarily be constructed through soil compaction. Aggregate could be used as needed to facilitate drainage, reduce erosion, and/or reduce dust. Typically, roads with aggregate receive approximately 4 inches (10 centimeters) of material on top of compacted soils.
 - **Fencing and Barriers:** The security fencing around the mowed areas would be modified allowing approximately 8 inches (20 centimeters) of space at the bottom of the fence. Once the solar array is constructed, desert tortoises would be allowed to move freely back into the mowed areas of the solar facility. Permanent desert tortoise exclusion fencing would remain around the perimeter of areas where traditional methods would be used, and between areas constructed via mowing and traditional methods. Permanent desert tortoise fencing would consist of hardware cloth and T-

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posts adhered to a fence. A tortoise barrier guard would be required across every access road traveling between areas constructed via mowing and traditional methods.

- **Drainage Features:** Existing drainage is maintained under the mowing method, as is vegetative cover, which reduces runoff and sedimentation by trapping sediment and debris and slowing the rate of runoff and the effects of scouring. It also provides microhabitat, forage and greater survivability of cryptobiotic crusts along the drainages. A large drainage basin, channel, and berms are needed for construction using traditional methods in order to capture large potential flooding events that have increased velocity and scouring potential. These flood prevention features may not be required, or the features needed may be smaller for alternatives that include mowing. The sizing would be determined during final design.
- **Construction**
 - **Surface Preparation:** Surface preparation would be minimal. The mowing method of construction would also minimize the areas of grading and leveling. Grading would be conducted in areas where existing topography must be modified for installation and operations. Surface drainage channels would remain largely unchanged.
 - **Vegetation Removal:** Vegetation would only be actively and completely removed in the areas of the power blocks; along a series of access roads; and in areas where topography modification is required for access or construction. These areas would be graded and vegetation tilled into the ground.
 - **Vegetation Mowing, Clipping, or Crushing:** In all other areas within the mowed configuration, vegetation would only be mowed or clipped to a height of 24 inches (61 centimeters), to allow for panel construction. Vegetation may be trimmed to no less than 18 inches (46 centimeters) tall under justifiable circumstances. In rare circumstances vegetation in limited areas may need to be crushed to allow for construction of a panel or equipment. At a minimum, root-balls would remain in place on crushed vegetation so that it would regrow. Mowing would occur at a height that would not kill the dominant shrub and bunch grass species and would still result in functional habitat when tortoises are permitted to re-occupy the mowed site. Utilizing skid steer vehicles or other tracked vehicles and minimizing the construction passes during installation would encourage continued viability of the native plant community. Construction would be accomplished through use of equipment selected to maximize slope-climbing capability, minimize width of footprint, minimize weight of equipment and ground pressure, and allow extended reach across multiple solar array rows. A flail-type mower mounted on skids that are mounted on a low-ground pressure tractor, approximately 5 to 6 pounds per square inch (34 to 41 kilopascals), is an example of this type of equipment, as shown on Figure 4. A rubber tracked skid steer, or a steel tracked excavator could also be used.
 - **Conduits Installation:** Panels would be electrically connected to each other under the panel face to the inverter for each 4 by 4 array block. Underground conduit is needed to connect the electrical system from the inverter to the nearest substation. Conduits

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- would be installed in or along access roads to the nearest substation and would require a trench up to 10 feet (3 meters) wide and 3 to 5 feet (0.91 to 1.5 meters) deep.
- **Workforce and Schedule:** Similar workforces in both worker type and number would be required for construction of the mowing areas as for the traditional methods. The construction schedule; however, could require up to 40 percent more labor or 40 percent more equipment for construction in areas where the mowing method is used as compared with areas constructed using traditional methods. Little data is available on the increased labor required to construct mowed areas, since few projects have been constructed using these methods. The increase of up to 40 percent was provided by Bombard Construction based on their construction of the Valley Electric Association 15-MW Community Solar Project, located in Pahrump, Nye County, Nevada. Factors that contribute to the increased labor to construct mowed areas include the following:
 - The need for vehicles to travel greater distances to access parts of the site, given that access must remain on access roads located 0.25-mile apart;
 - Use of special equipment that must reach over longer distances to construct facilities, requiring more time to set up and operate;
 - Construction of deeper posts that take longer to install; and
 - The need to potentially perform more work by hand due to reduced accessibility of large equipment that can perform work more quickly.
 - An increase of 40 percent in labor is assumed for the mowed areas as a “worst-case” scenario. Only the mowed areas result in increased labor and time. That is, if 65 percent of a site is mowed, only that 65 percent would require the increased labor to construct.
- **Maintenance**
 - **Conditions:** Maintenance of the facility in the mowed areas would occur under the conditions of a Biological Opinion.
 - **Vegetation Trimming:** Vegetation under the solar arrays would be cut or trimmed with motorized equipment during the winter months or by hand during panel washing to a height of 24 inches (61 centimeters) but no less than 18 inches (46 centimeters) under justifiable conditions. This allows the vegetation to maintain its habitat function for desert tortoise and to maintain hydrology patterns on the site while not impacting the functionality of the solar panels. It is anticipated that trimming would occur every few years, but not annually.
 - **Signage and Training:** Signage on roads and worker environmental awareness training would be required to minimize risks of take to desert tortoise during Project maintenance.

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Figure 4 Typical Mowing Equipment



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2.4 ALTERNATIVES SCREENING

Alternatives to the Proposed Action were screened under NEPA, (refer to BLM NEPA Handbook § 6.6.3) based on the following criteria:

1. Does the alternative respond to BLM's purpose and need?
2. Does it meet most of the basic objectives of the Project?
3. Is its implementation technically and economically feasible³?
4. Is it consistent with the basic policy objectives for the management of the area?
5. Is its implementation remote or speculative?
6. Is it substantially similar in design to an alternative that is analyzed?
7. Would it have substantially similar effects on an alternative that is analyzed?
8. Would it avoid or substantially lessen any significant effects of the Project?

This process for eliminating potential alternatives from detailed analysis complies with 40 CFR Section 1502.14(a), BLM IM 2011-059. A summary of the alternatives screening that was conducted for the Project is provided in Table 3.

Two alternatives were carried forward as viable alternatives to be addressed in the NEPA EIS. These two alternatives are described in the following sections in greater detail.

2.5 ALL MOWING ALTERNATIVE–DEVELOPMENT AREAS A, B, B1, B2, C, D, E, AND G

2.5.1 Description of Alternative Development Areas

The All Mowing Alternative includes development of areas A (with a portion removed to avoid a sensitive cultural resource), B, B1, B2, C (with a small portion of area C removed for avoidance of threecorner milkvetch), a portion of area D, area E, and area G (with the southern portion removed), for a total solar field area of 7,115 acres (2,879 hectares). Area F would not be developed. The All Mowing Alternative would involve mowing of all development areas and maintaining vegetation on site for the life of the Project. The All Mowing Alternative is shown in Figure 5. A site plan for the All Mowing Alternative is shown in Appendix B.

³ Economic feasibility does not cover speculation about an applicant's costs or profit. It refers to whether the implementation of the alternative is likely given past and current practice and technology.

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Table 3 Alternatives Screening

Alternative	Consistent with Purpose and Need of the BLM and Objectives of Project	Technically Practical and Economically Feasible	Consistent with Policy Objectives for the Management of the Area	Implementation is Remote or Speculative	Substantially Similar Design and Effects on an Alternative Being Analyzed	Avoid or Substantially Lesson Significant Effects	Carry Through for Full EIS Analysis?
Traditional Development – Development Areas A, B, B1, B2, C, D, E, and G	Yes	Yes	Yes, same as the Proposed Action	No	Yes	No	No. (substantially similar to the Proposed Action)
All Mowing Alternative – Development Areas A, B, B1, B2, C, D, E, and G	Yes	Yes ⁴	Yes, same as the Proposed Action.	No	No	Yes	Yes
Hybrid Alternative – Development Areas A, B, B1, C, D, and E	Yes	Yes	Yes, same as the Proposed Action.	No	No	Yes	Yes
50/50 Percent Mowing to Traditional Development –Development Areas A, B, B1, B2, C, and F	Yes	Yes	Yes, same as the Proposed Action.	No	No	No. (This alternative would reduce some substantial environmental effects but would create new, substantial effects on threecorner milkvetch, a state endangered plant species.	No. (due to increased impacts on threecorner milkvetch)
Other Portions of the 44,000-acre (17,806-hectare) Application Area	Yes	No. Due to increased distance from electric transmissions line and degree of slope.	Yes, same as the Proposed Action.	No	May differ	No. Development in some other portions of the application area would incur more visual conflicts or require more grading and disturbance.	No. This alternative would not be feasible and may result in greater effects.
Alternative Configurations	Yes	Yes	Yes, same as the Proposed Action.	No	May differ, several configurations would result in similar effects as the Proposed Action or other alternatives analyzed.	Yes	No. A range of alternative configurations that are approximately 7,100 acres (2,873 hectares) are already being considered as alternatives and would be analyzed moving forward. No additional alternative configurations are being considered.
Allowance for an Energy Corridor at Tribal Boundary	Yes	No. This alternative is not practical as there is no need for a utility corridor at the Reservation/BLM boundary. Utility corridors are found immediately to the east and west of the Project site.	Yes, same as the Proposed Action.	No	No	No	No. This alternative is not necessary given the two existing energy corridors within and adjacent to the Project ROW application area.

⁴ Economic feasibility does not cover speculation about an applicant’s costs or profit. It refers to whether the implementation of the alternative is likely given past and current practice and technology.

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Alternative		Consistent with Purpose and Need of the BLM and Objectives of Project	Technically Practical and Economically Feasible	Consistent with Policy Objectives for the Management of the Area	Implementation is Remote or Speculative	Substantially Similar Design and Effects on an Alternative Being Analyzed	Avoid or Substantially Lesson Significant Effects	Carry Through for Full EIS Analysis?
Private Land		No. Private land available is limited and none that could support a 690-MW project with appropriate access to transmission lines and substations with adequate capacity.	No. The available private land is parcelized and meant to accommodate higher-intensity industrial use, rendering it too expensive for solar PV development.	Not applicable. BLM Policy Objectives do not apply to non-BLM land.	Yes. Limitations on available private land to support a 690-MW project.	No	No	No. Does not meet the purpose and need, nor is it economically reasonable.
Other BLM-Administrated Land	Mormon Mesa	Yes	Yes	Yes, same as the Proposed Action.	No	May differ	No. Site has similar constraints to the Project site.	No. The site is not a better alternative than the Project site.
	North Las Vegas	Yes	Partial. Land may not be available due to pending solar application.	Yes, same as the Proposed Action.	Yes. Land may not be available.	May differ	No. Site has similar constraints to the Project site.	No. The site is not a better alternative than the Project site.
	Indian Springs	Yes	No. Land may not be available due to pending solar application.	Yes, same as the Proposed Action.	Yes. Land may not be available.	May differ	No. Site has similar constraints to the Project site.	No. The site is not a better alternative than the Project site.
	Jean	No. Unsuitable on-site transmission infrastructure so alternative would not minimize environmental impacts.	Partial. The site is partially within Clark County's Land Disposition Bill and may be sold for private development. Costs of building transmission may make the Project infeasible.	Yes, unless the site is sold for private development and is no longer BLM land.	Yes. Land may not be available.	May differ	No. Site has similar constraints to the Project site.	No. Does not meet the purpose and need.
	Armargosa Valley	Yes	No. Land may not be available due to pending solar application.	Yes, same as the Proposed Action.	Yes. Land may not be available.	May differ	No. Site has similar constraints to the Project site.	No. Not a better alternative than the Project site.
Brownfield/Degraded Lands		No. No identified sites in the region were found that could support a 690-MW project with appropriate access to transmission lines and substations with adequate capacity. Does not meet BLM's purpose and need to response to the application.	Yes	Not applicable. No site was identified to support a 690-MW project.	Yes. No identified site available to support a 690-MW project.	Not applicable. No site was identified to support a 690-MW project.	Not applicable. No site was identified to support a 690-MW project.	No. Does not meet the purpose and need.
Concentrated Solar Thermal Generation		Yes	No. Is no longer cost effective as compared with PV.	Yes, same as the Proposed Action.	Yes	No	No. Has a larger footprint, requires more water, has more biological and visual impacts.	No. Not economically or environmentally reasonable.

2 ACTION ALTERNATIVES

Alternative	Consistent with Purpose and Need of the BLM and Objectives of Project	Technically Practical and Economically Feasible	Consistent with Policy Objectives for the Management of the Area	Implementation is Remote or Speculative	Substantially Similar Design and Effects on an Alternative Being Analyzed	Avoid or Substantially Lesson Significant Effects	Carry Through for Full EIS Analysis?
Technology Considerations (Concentrated Photovoltaic [CPV] Technology)	No. Does not use solar technology that is proven (objectives).	No. CPV technology is relatively new and there are risks for long-term performance reliability. Manufacturing capacity to supply large-scale utility projects has not been proven to date.	Yes, same as the Proposed Action.	Yes	No	No. Structures would incur more visual conflicts due to structure height (as high as 40 feet [12 meters]).	No. Not technically practical and feasible.
Other Renewable Energy Projects	No. Does not meet the objectives to construct and operate a solar PV power-generating facility.	Yes	Yes, same as the Proposed Action.	Yes	No	No	No. Does not meet the purpose and need.
Distributed Generation	No. Does not meet the purpose and need of BLM to respond to the application nor the objective to provide 690-MW to Nevada and neighboring states.	No. Would require the equivalent of 69 10-MW systems at individual locations or near the point of consumption and BLM has no authority or influence over the installation of distributed generation systems, other than on lands that it administers.	Not applicable. BLM Policy Objectives do not apply to non-BLM land.	Yes	No	Yes	No. Does not meet the purpose and need.
Conservation and Demand Side Management	No. Does not meet the objective to construct and operate a solar PV power-generating facility.	No. BLM has no has no authority or influence over energy conservation and demand-side management, other than on lands that it administers.	Not applicable. BLM Policy Objectives do not apply to non-BLM land.	Yes	No	Yes	No. Does not meet the purpose and need.

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2 ACTION ALTERNATIVES

2.5.2 Comparison of Impacts Between the All Mowing Alternative and the Proposed Action

2.5.2.1 Biological

The All Mowing Alternative would not involve construction in development area F or the portion of development area C with the highest known densities of threecorner milkvetch, minimizing effects on known occurrences of threecorner milkvetch. Development within Clark County's proposed Area of Critical Environmental Concern (ACEC) in development areas D and E would occur, similar to the Proposed Action. Figure 5 shows the All Mowing Alternative development areas.

The All Mowing Alternative would impact a greater number of tortoises than the Proposed Action, due to the increased number of tortoise in the Alternative development areas, but would minimize the level of effect on individual desert tortoise by utilizing mowing throughout the site. This alternative would have benefits on desert tortoise compared to the Proposed Action by reintroducing tortoise following construction. Mowed areas would have greater impacts on tortoise during operations and maintenance, which requires some degree of disturbance and human presence that translocated tortoises would not experience.

The All Mowing Alternative would minimize the spread of invasive and noxious weeds by not including grading and disk and roll methods that spread invasive and noxious weed seeds into new areas, where the seeds could easily take to the recently disturbed soils.

2.5.2.2 Jurisdictional Waters

The All Mowing Alternative would also reduce impacts on desert washes, as construction in areas of mowing would generally avoid washes and would maintain the existing contours of the land and vegetation. General vegetation and United States Army Corps of Engineers (USACE) jurisdictional waters impacts would be reduced compared with the Proposed Action.

2.5.2.3 Visual

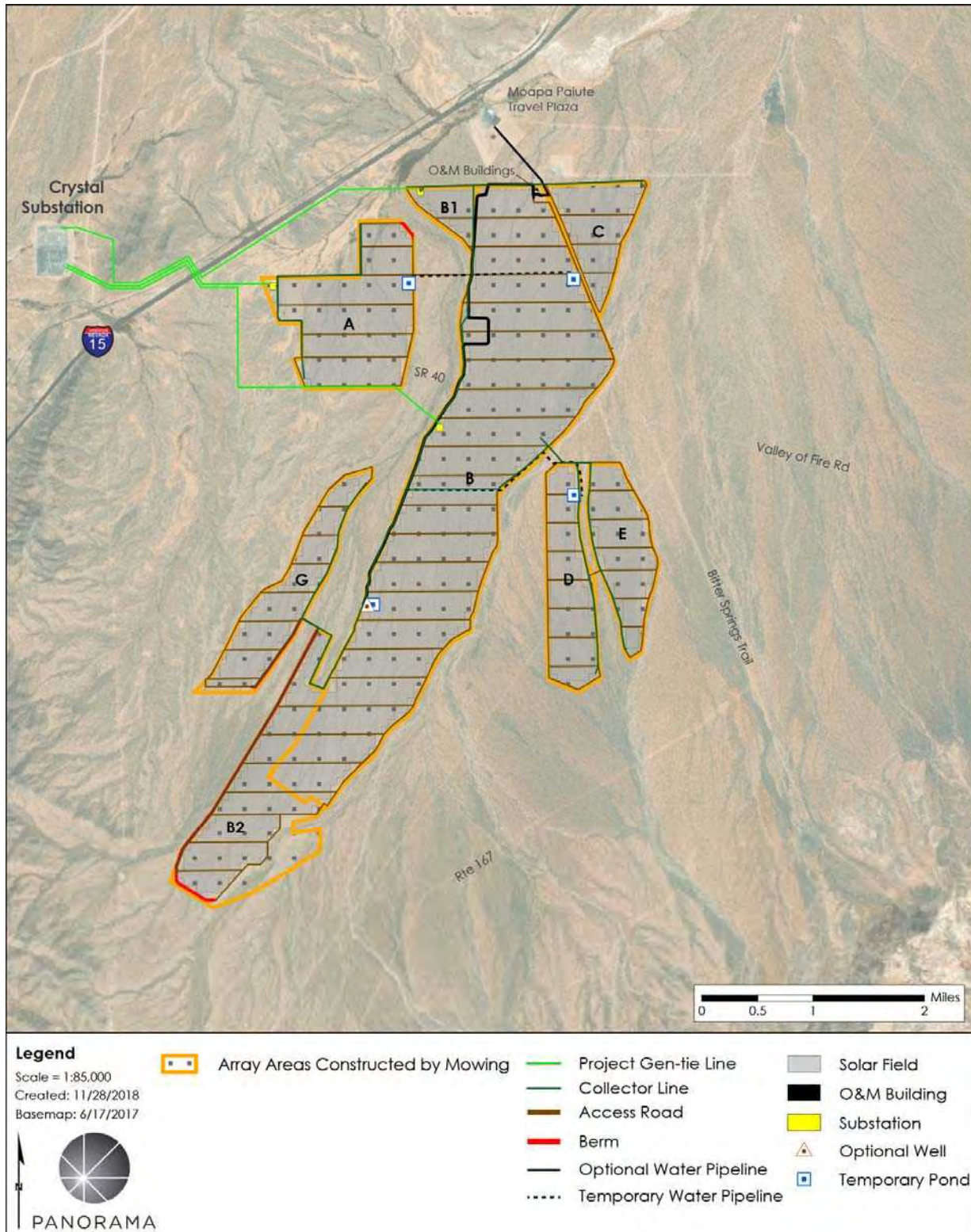
The All Mowing Alternative would cause a minor increase in visual impacts as mowing requires the height of the solar panels to increase by approximately 1.5 feet (0.46 meter). Most of the visual impacts are from the development of the Project on an undeveloped site; therefore, the incremental increase in height would not substantially increase impacts over the Proposed Action.

2.5.2.4 Recreation

The All Mowing Alternative would have similar impacts on recreationalists and recreation facilities as the Proposed Action, except that access along Route 167 would be maintained. Races for OHV have not occurred in the alternative area (similar to Proposed Action areas) since the Mint 400 in 2011.

2 ACTION ALTERNATIVES

Figure 5 All Mowing Alternative – Development Areas A, B, B1, B2, C, D, E, and G



Sources: (Louis Berger Group, 2018; USDA-FSA-APFO, 2017; Clark County Nevada GIS Management Office, 2018)

2 ACTION ALTERNATIVES

2.5.2.5 Old Spanish National Historic Trail

The Congressionally-designated Old Spanish National Historic Trail (OSNHT) follows the California Wash. The All Mowing Alternative would minimize direct impacts on the Congressionally-designated trail, like the Proposed Action, as no development would occur in the wash. The All Mowing Alternative would also require closure of the existing Old Spanish Trail Road before it reaches Valley of Fire Road, which is not a part of the OSNHT, but may be used as a recreational facility to experience the trail.

Visual impacts on the OSNHT would also be similar to those of the Proposed Action, with some reduced impacts for parts of development area D that would not be developed and afford the best views to the Muddy Mountains from the trail.

2.5.2.6 Utility Corridor

The All Mowing Alternative completely avoids the Section 368 Energy Corridor that crosses through development area D.

2.6 HYBRID ALTERNATIVE–DEVELOPMENT AREAS A, B, B1, C, D, AND E

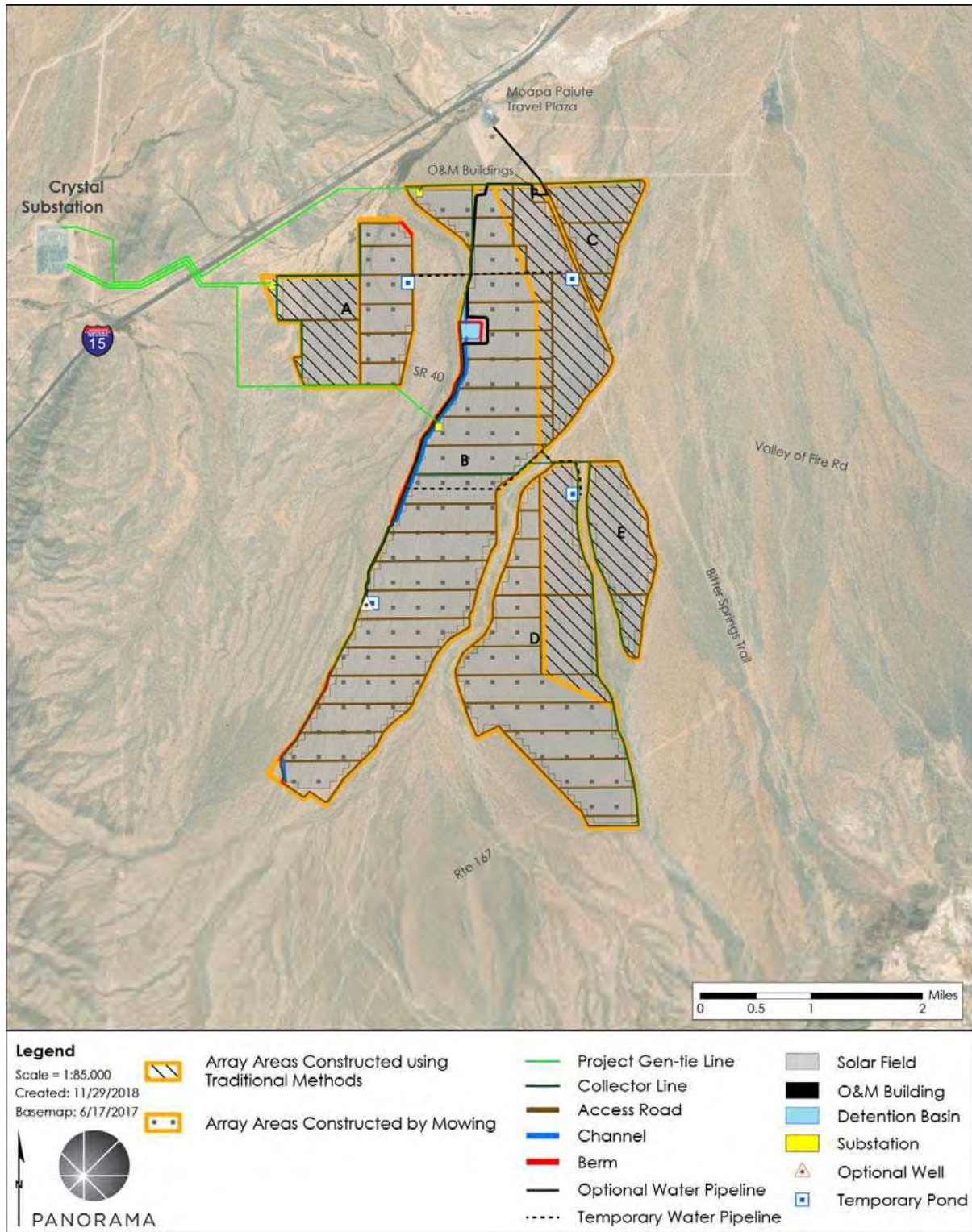
2.6.1 Description of Alternative

The Hybrid Alternative includes development of areas A (with a portion removed to avoid a sensitive cultural resource), B, B1, C (with a small portion of area C removed for avoidance of threecorner milkvetch), D, and E, for a total solar field area of 7,038 acres (2,848 hectares). Development areas B2, F, and G would not be developed. The Hybrid Alternative would involve mowing, as previously described, of roughly 65 percent of the development area, and traditional development methods would be used for the remaining 35 percent.

Approximately 4,587 acres (1,856 hectares) would be developed by mowing, and approximately 2,451 acres (992 hectares) would be developed by traditional methods. The Hybrid Alternative is shown in Figure 6. A site plan for the Hybrid Alternative is shown in Appendix B.

2 ACTION ALTERNATIVES

Figure 6 Hybrid Alternative – Development Areas A, B, B1, C, D, and E



Sources: (Louis Berger Group, 2018; USDA-FSA-APFO, 2017; Clark County Nevada GIS Management Office, 2018)

2 ACTION ALTERNATIVES

2.6.2 Comparison of Impacts Between the Hybrid Alternative and the Proposed Action

2.6.2.1 Biological

The Hybrid Alternative would not involve construction in development area F or the portion of development area C with the highest known densities of threecorner milkvetch, minimizing effects on known occurrences of threecorner milkvetch. Development within Clark County's proposed ACEC in development areas D and E, would occur, similar to the Proposed Action. The Hybrid Alternative would affect a similar number of tortoises as the Proposed Action, but would reduce the level of effect on desert tortoise by utilizing mowing in combination with traditional methods in several development areas. The Hybrid Alternative would have benefits on desert tortoise over the Proposed Action by maintaining a portion of desert tortoise habitat where tortoises could be relocated after construction. Mowed areas would have greater impacts on reintroduced tortoise during operations and maintenance, which requires some degree of disturbance and human presence that translocated tortoises would not experience.

The Hybrid Alternative would reduce the amount of grading and disk and roll methods. Mowing would reduce the spread of invasive and noxious weed seeds into new areas where the seeds could easily take to the recently disturbed soils.

2.6.2.2 Jurisdictional Waters

The Hybrid Alternative would also reduce impacts on desert washes. General vegetation impacts would be reduced, as would impacts on USACE jurisdictional waters, as compared with the Proposed Action, because 65 percent of the site would remain with existing contours and vegetation.

2.6.2.3 Visual

Visual impacts would be similar to those of the Proposed Action, as the alternative includes construction of solar arrays in development areas D and E. Mowing requires the height of the solar panels to increase by approximately 1.5 feet (0.46 meter). Most of the visual impacts are from the development of the Project on an undeveloped site; therefore, the incremental increase in height would not substantially increase impacts over the Proposed Action.

2.6.2.4 Recreation

The Hybrid Alternative would have similar impacts on recreation as the Proposed Action.

2.6.2.5 Old Spanish National Historic Trail

Impact on the OSNHT and recreational facilities used to experience the trail (i.e., Old Spanish Trail Road) would be the same as for the Proposed Action since the same areas in proximity to the trail would be developed under this alternative as the Proposed Action.

2.6.2.6 Utility Corridor

The Hybrid Alternative would involve installation of solar arrays within the Section 368 Energy Corridor, similar to the Proposed Action, creating the same conflict as the Proposed Action.

2 ACTION ALTERNATIVES

2.7 SUMMARY OF IMPACT AREAS, ACREAGES, AND EFFECTS BY ALTERNATIVE

Table 4 provides an approximation of the acreage for each alternative, by development area. Permanent and temporary disturbances are identified by alternative in Table 5. Table 6 provides a summary of desert tortoise reintroduction by layout. Table 7 provides a summary comparison of effects by action alternative. The No Action alternative would have no effects and as such, is not included in the table.

Table 4 Approximate Project Acreages by Alternative, Acres (Hectares)

Site	Proposed Action	All Mowing Alternative	Hybrid Alternative
Traditional Methods/Disk and Roll			
A	886 (359)	--	414 (168)
B	3,459 (1,400)	--	711 (288)
B1	--	--	--
B2	--	--	--
C	485 (196)	--	348 (141)
D	1,804 (730)	--	540 (219)
E	438 (177)	--	438 (177)
F	--	--	--
G	--	--	--
Subtotal	7,071 (2,861)	0	2,451 (992)
Mowing			
A	--	856 (346)	442 (179)
B	--	3,459 (1,400)	2,748 (1,112)
B1	--	132 (53)	132 (53)
B2	--	867 (351)	--
C	--	348 (141)	--
D	--	482 (195)	1,265 (512)
E	--	435 (176)	--
F	--	--	--
G	--	535 (216.5)	--
Subtotal	0	7,115 (2,879)	4,587 (1856)
Layout Total	7,071 (2,861)	7,115 (2,879)	7,038 (2,848)

4. Due to rounding, numbers do not add precisely.

5. Values are approximate and do not account for Project facilities such as substations and access roads.

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Table 5 Summary of Permanent and Temporary Disturbance

Disturbance Type	Proposed Action, Acres (Hectares)	All Mowing Alternative, Acres (Hectares)	Hybrid Alternative; Acres (Hectares)	Notes
Permanent Disturbance – Vegetation Removed				
Entire Solar Facility	7,071 (2,862)	268 (108)	2,648 (1,072)	690-MWac PV solar facility
Solar Arrays (Traditional Development)	6,810.9 (2,756.3)	~0 ⁴	2,360.0 (955.1)	Includes the solar PV panels, steel table frames, trackers, and posts
O&M Building	2.1 (0.85)	2.1 (0.85)	2.1 (0.85)	Includes the O&M building, parking, and water tank storage
Substations	7.1 (2.9)	7.1 (2.9)	7.1 (2.9)	Each of the three substations occupies approximately 2.4 acres (0.97 hectare)
Firebreak	42.2 (17.1)	50.1 (20.3)	43.2 (17.5)	10-foot wide firebreak outside the perimeter fence
Perimeter Road	84.2 (34.1)	98.2 (39.7)	100.9 (40.8)	Up to 20 feet (6 meters) wide, graded and covered with gravel base or compacted soil.
Internal Access Roads for Solar Field and Utility Corridor	62.9 (25.5)	84.2 (34.1)	73.4 (29.7)	Roads would be graded and covered with gravel base or compacted soil. Includes temporary and permanent disturbance related to water infrastructure.
Water Ponds	4 (1.6)	4 (1.6)	4 (1.6)	Four temporary ¹ water ponds would be constructed in development areas A, B, and D.
Drainage Features	31.6 (12.7)	0	31.6 (12.8)	Includes channels (2.26 miles [3.63 kilometers]), a 15.4-acre (6.2-hectare) detention basin, and a spillway
Berms	11.2 (4.5)	7.1 (2.9)	11.2 (4.5)	3.43 miles (5.5 kilometers) of berms

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Disturbance Type	Proposed Action, Acres (Hectares)	All Mowing Alternative, Acres (Hectares)	Hybrid Alternative; Acres (Hectares)	Notes
Equipment Area	14.7 (5.9)	14.7 (6)	14.7 (6)	425 equipment areas, which include PCSs, batteries (53,550 individual batteries), inverters, and medium voltage transformers within the solar facility footprint
Gen-tie and Access Roads to Gen-tie	25.9 (10.5)	24.4 (9.9)	24.4 (9.9)	Gen-tie foundations assumed to fall within acreage for access roads
Total	7,097 (2,872) ⁵	292 (118) ⁵	2,672 (1,082) ⁵	
Permanent Disturbance – Vegetation Maintained				
Solar Arrays (Mowing) ³	0	6,847.4 (2,771.0)	4,389.7 (1,776.4)	690-MWac PV solar facility
Total	0	6,847 (2,771)	4,390 (1,777)	
Temporary Disturbance (granted through a short-term ROW, if outside the Project ROW area) ²				
Gen-tie structure laydown, staging, and installation	37.7 (15.3)	36.1 (14.6)	36.1 (14.6)	Gen-tie laydown and staging, 200 feet by 200 feet (61 meters by 61 meters) at each pole, outside the solar facility fence
Gen-tie line conductor stringing	14.8 (6.0)	14.8 (6.0)	14.8 (6.0)	Multiple pulling sites for each gen-tie line where direction changes sharply; 100 feet (30.5 meters) by 500 feet (152.4 meters)
Total	53 (21)	51 (23)	51 (23)	
GRAND TOTAL	7,150 (2,893)	7,190 (2,910)	7,113 (2,879)	

2 ACTION ALTERNATIVES

Disturbance Type	Proposed Action, Acres (Hectares)	All Mowing Alternative, Acres (Hectares)	Hybrid Alternative; Acres (Hectares)	Notes
<ol style="list-style-type: none">1. Although the water ponds are temporary and would be removed following construction, the impact would be permanent.2. Overlap with gen-tie access roads was netted out from these temporary impacts as access roads are considered under permanent impacts.3. Mowed areas would be maintained throughout the life of the Project through vegetation trimming.4. Negligible permanent disturbance would occur from post installation in mowed areas.5. If selected as the water source, the water pipeline to Moapa Paiute Travel Plaza would be constructed in an already disturbed area along Valley of Fire Road and would not increase permanent disturbance.				

3 COMPARISON OF ALTERNATIVES

Table 6 **Summary of Reintroduction Acreages and Number of Tortoises to Be Reintroduced for the Proposed Action and Alternatives**

Alternative	Development, Acres (Hectares)	Reintroduction, Acres (Hectares)	Estimated Number of Tortoises for Reintroduction	Estimated Number of Tortoises for Distant Translocation	Total Number of Tortoises
Proposed Action	7,071 (2,862)	0	0	208	208
All Mowing Alternative	7,115 (2,879)	7,115 (2,879)	221	32	254
Hybrid Alternative	7,038 (2,848)	4,587 (1,856)	183	36	219

3 COMPARISON OF ALTERNATIVES

Table 7 Comparison of Effects by Action Alternative

Potential Impact	Proposed Action	All Mowing Alternative	Hybrid Alternative
Land Uses			
Lands and Realty	The Proposed Action would cross I-15 and Union Pacific railroad and would require necessary encroachment permits. The gen-tie lines would cross the Black Mountain – Crystal energy corridor and would comply with transmission line separation guidelines. The gen-tie lines would cross existing and future transmission lines. A cooperative engineering agreement and appropriate approvals would need to be obtained prior to construction. Solar panels would be installed within a Section 368 Energy Corridor of Concern (COC) and would require review by BLM to minimize impacts or else avoidance of development in the COC.	Impacts would be similar to the Proposed Action, except the All Mowing Alternative would avoid adverse impacts associated with development in the COC.	Same as the Proposed Action.
Specially designated areas	The Proposed Action would have an adverse indirect impact (visual) on the Bitter Springs Back Country Byway (BSBCB) Specially Designated Area. The Proposed Action would have an adverse effect on the Old Spanish National Historic Trail (OSNHT) (See Old Spanish National Historic Trail [Section 3.13] in this table). Mitigation would be required to address adverse effects.	Similar to the Proposed Action.	Similar to the Proposed Action.
Rangeland resources	The Project area is not located within a grazing allotment. No adverse effects would occur.	Same as the Proposed Action.	Same as the Proposed Action.
Air space	The Proposed Action would not conflict with military or civil airspace designations with implementation of mitigation. No adverse impacts from glint and glare or communication system interference would occur.	Same as the Proposed Action.	Same as the Proposed Action.
Recreation			
Change in access to existing recreation opportunities or areas	Approximately 7,071 acres (2,862 hectares) of land open for recreational use would be removed for a period of approximately 30 years (the duration of the ROW grant). The Proposed Action would sever direct access along Old Spanish Trail Road through development areas D and E, cutting off access between Old Spanish Trail Road and Valley of Fire Road and would cut off access on Route 167 through development area D, where it connects to the BSBCB and Valley of Fire Road. The Proposed Action would result in the loss of several OHV trails. Mitigation would be required to address adverse effects.	Same as the Proposed Action, except access along Route 167 would be maintained through development area D.	Same as the Proposed Action.
Geology, Soils, and Minerals			
Seismic ground shaking and ground failure	The Proposed Action would not substantially increase risk of seismic hazard exposure. No risk of landslides or other destabilization would occur.	Same as Proposed Action.	Same as Proposed Action.
Soil collapse	Potential for soil collapse and liquefaction in the Project area is low and not anticipated.	Same as Proposed Action.	Same as Proposed Action.

3 COMPARISON OF ALTERNATIVES

Potential Impact	Proposed Action	All Mowing Alternative	Hybrid Alternative
Increased erosion and loss of topsoil	The Proposed Action would involve approximately 7,071 acres (2,862 hectares) of surface disturbance and vegetation removal, which would increase the potential for soil erosion. Potential adverse effects would be minimized with implementation of the Stormwater Pollution Prevention Plan (SWPPP) ⁵ during construction and through mitigation, including erosion stabilization, during operation. Grading for site preparation could result in loss of topsoil and would be minimized through Project best management practices (BMPs), including topsoil salvage.	The All Mowing Alternative would result in the least amount of erosion and loss of topsoil due to most of the development areas being left vegetated. This alternative includes the grading of 268 acres (108 hectares) for roads, equipment, and buildings.	The Hybrid Alternative has a reduced potential for direct and indirect effects due to 65 percent (4,390 acres [1,777 hectares]) of the development area being left vegetated, as compared with the Proposed Action where the entire site is disked and compacted. This alternative includes the construction of 2,648 acres (1,072 hectares) using traditional methods and grading as compared with 7,071 acres (2,862 hectares) for the Proposed Action.
Loss of minerals	No active mining claims, active oil and gas wells, or geothermal leases or operations are present on the Project site. No adverse effects on availability of mineral resources or mineral extraction would occur.	Same as the Proposed Action.	Same as the Proposed Action.
Paleontological Resources			
Loss of paleontological resources	The Proposed Action would involve ground-disturbance within areas of moderately paleontologically sensitive older alluvium. One known paleontological resource would be collected per mitigation. Previously undiscovered paleontological resources could be impacted in areas of disk and roll and grading that disturbs the ground surface. Mitigation would be required to address adverse effects.	The All Mowing Alternative would have the fewest direct and indirect effects on paleontological resources, due to most of the development area being left vegetated (and, thus, relatively undisturbed). This alternative includes the grading of 268 acres (108 hectares) for roads, equipment, and buildings.	The Hybrid Alternative would permanently remove 2,648 acres (1,072 hectares) of previously undisturbed native vegetation on 65 percent of the Project site (4,390 acres [1,777 hectares]) resulting in fewer impacts on paleontological resources as compared with the Proposed Action.
Water Resources			
Increase in flooding and sedimentation	The Proposed Action would involve approximately 7,071 acres (2,862 hectares) of surface disturbance through traditional construction methods, which could increase erosion and sedimentation during construction and operation, as it leaves soils unvegetated. Implementation of the SWPPP BMPs and other mitigation would minimize the impact.	Impacts would be similar to the Proposed Action, except the All Mowing Alternative would result in much less surface disturbance that could increase sedimentation and runoff. Flows could still increase from clearing of roads, but impacts would be minimal.	The Hybrid Alternative would permanently remove 2,648 acres (1,072 hectares) of previously undisturbed native vegetation. Mowing of 65 percent of the Project site (4,390 acres [1,777 hectares]) would result in less potential for impacts related to sedimentation and runoff as compared with the Proposed Action.
Potential contamination of surface water	Accidental release of oil, fuel, or other chemicals from mobile sources during construction may occur. Implementation of BMPs in compliance with the SWPPP and mitigation would reduce the impacts.	Same as the Proposed Action.	Same as the Proposed Action.
Changes to groundwater quality and quantity	The Proposed Action would have no impacts on groundwater quality. If the option to develop an on-site groundwater well is exercised, groundwater pumping would not have direct impacts on surrounding water users. Cumulative impacts on groundwater users and surface manifestations of groundwater would be minimized or avoided through the water appropriation review process.	Same as the Proposed Action.	Same as the Proposed Action.
Vegetation and Jurisdictional Waters			

⁵ Under the USEPA’s National Pollutant Discharge Elimination System stormwater permitting program, a SWPPP is required for discharges from construction activities that disturb one or more acres.

3 COMPARISON OF ALTERNATIVES

Potential Impact	Proposed Action	All Mowing Alternative	Hybrid Alternative
Native vegetation communities	Approximately 7,071 acres (2,862 hectares) of previously undisturbed native vegetation would be permanently removed by the Proposed Action.	Native vegetation would remain on site except in areas developed for utilities, buildings, and along roads (over approximately 268 acres [108 hectares]), resulting in the fewest impacts to native vegetation of the alternatives.	The Hybrid Alternative would permanently remove 2,648 acres (1,072 hectares) of previously undisturbed native vegetation. Using mowing on 65 percent of the Project site (4,390 acres [1,777 hectares]) would result in fewer impacts on native vegetation as compared with the Proposed Action.
Impacts on special status plant species	The Proposed Action would directly impact known occurrences of threecorner milkvetch in development area C and suitable habitat in development areas C, D, and E. Implementation of Environmental Exclusion Areas would minimize effects to known populations. Loss of habitat would be an adverse effect. Indirect impacts could occur through spread of invasive species. Implementation of invasive species controls would reduce impacts. Mitigation would be required to address adverse effects.	The All Mowing Alternative would avoid direct impacts on all of the known occurrences of threecorner milkvetch in development area C. Adverse impacts on suitable milkvetch habitat would be similar to the Proposed Action. Indirect impacts could occur through spread of invasive species although the likelihood of spread would be greatly reduced since native vegetation would remain in mowed areas.	Same as the All Mowing Alternative, with reduced potential for spread of invasive species in mowed areas where native vegetation remains.
Spread of invasive non-native species	Vegetation removal and use of construction equipment could facilitate spread of invasive weeds. The Site Restoration Plan would minimize these effects.	Same as the Proposed Action, although the likelihood of spread of invasive species would be greatly reduced since native vegetation would remain in mowed areas.	Same as the Proposed Action, with reduced potential for spread of invasive species in mowed areas where native vegetation remains.
Cacti/Yucca	Construction activities would directly affect approximately 121,300 cacti and yucca individuals on the Project site. The Site Restoration Plan and mitigation would address these effects.	Cacti and yucca would remain on site except in utility areas and along roads, resulting in the least impacts. Yucca that would not survive trimming would be salvaged per the Site Restoration Plan and mitigation.	The Hybrid Alternative would reduce the number of cacti and yucca impacted to 56,957 individuals by using mowing on 65 percent of the Project site, resulting in less impacts than the Proposed Action. Cacti would be trimmed but yucca that would not survive trimming would be salvaged per the Site Restoration Plan and mitigation.
Biocrust/Desert Pavement	Approximately 414 acres (168 hectares) of biocrust and 524 acres (212 hectares) of desert pavement would be affected by grading and disk and roll. The Site Restoration Plan and mitigation would address these effects.	Biocrust and desert pavement would remain on site except in utility areas and along roads, resulting in the least impacts.	The Hybrid Alternative would reduce the acreage of effects to approximately 117 acres (47 hectares) of biocrust and 142 acres (57 hectares) of desert pavement by using mowing on 65 percent of the Project site, resulting in less impacts than the Proposed Action.
Impacts on ephemeral drainages and waters of the United States	Approximately 62 acres (25 hectares) of potentially jurisdictional ephemeral dry washes or channels would be indirectly or directly affected during construction and operation of the Project. Mitigation requiring avoidance of jurisdictional drainages, including a 36-acre (14.6-hectare) area in development area E, maintenance of predevelopment hydraulic conditions, implementation of BMPs, and compliance with United States Army Corps of Engineers (USACE) Section 404 would reduce effects. Fill quantities would likely be around 10 acres.	Permanent impacts would be limited to impacts on drainages from construction of access road crossings, utility trench crossings, posts, and drainage and erosion facilities. Approximately 2.2 acres (0.89 hectare) of potentially jurisdictional ephemeral dry washes or channels would be filled. Similar mitigation as defined for the Proposed Action would further minimize effects.	Permanent impacts would be limited to impacts on drainages from construction of access road crossings, utility trench crossings, posts, and drainage and erosion facilities. Approximately 2.2 acre (0.89 hectare) of potentially jurisdictional ephemeral dry washes or channels would be filled. Similar mitigation as defined for the Proposed Action would further minimize effects.
Wildlife; Migratory Birds; and Special Status Species including Threatened, Endangered, and Candidate Species			
Loss of habitat	The Proposed Action would permanently remove approximately 7,071 acres (2,862 hectares) of suitable habitat for wildlife species.	The All Mowing Alternative would have minimal impacts (approximately 268 acres [108 hectares]) related to loss of habitat.	The Hybrid Alternative would remove vegetation from a smaller area (approximately 2,648 acres [1,072 hectares]) of habitat.
Migratory birds	The Proposed Action could result in bird collisions with construction equipment and Project components. Implementation of Avian Power Line Interaction Committee measures and the Bird and Bat Conservation Strategy would minimize impacts.	Same as the Proposed Action.	Same as the Proposed Action.

3 COMPARISON OF ALTERNATIVES

Potential Impact	Proposed Action	All Mowing Alternative	Hybrid Alternative
Impacts on special status species	The Proposed Action would result in the loss of approximately 7,071 acres (2,862 hectares) of desert tortoise habitat from the Project site. Approximately 208 tortoises would be translocated. Adverse effects would occur. Mitigation would address adverse effects but not eliminate the effects.	The All Mowing Alternative would result in very minor loss (approximately 268 acres [108 hectares]) of desert tortoise habitat from the Project site; however, this alternative would increase the likelihood for take of desert tortoise during the operation and maintenance of the facility over 30 years. Approximately 220 tortoises would be reintroduced on the Project site and 32 would be translocated.	The Hybrid Alternative would remove less desert tortoise habitat (approximately 2,648 acres [1,072 hectares]) as compared with the Proposed Action; however, this alternative would increase likelihood for take of desert tortoise during the operation and maintenance of the facility. Approximately 183 tortoises would be reintroduced on the Project site and 36 would be translocated.
Air Quality and Climate Change			
Impacts on air quality from dust and vehicle emissions	The Proposed Action would involve approximately 7,097 acres (2,872 hectares) of ground-disturbance on the Project site and along the gen-tie lines and use of construction vehicles that would result in fugitive dust and vehicle emissions during construction and decommissioning. Mitigation would minimize effects but concentrations of nitrous oxides and particulate matter greater than 10 micrometers in diameter would still exceed standards. Dust generation during operation and maintenance would not exceed standards with controls in place.	The All Mowing Alternative would involve mowing all development areas, which would reduce fugitive dust generation. Construction emissions of criteria pollutants would increase due to mowing based on a greater duration of equipment use. Dust generation during operation and maintenance would be reduced, as vegetation would be left in the solar development areas.	Impacts would be similar to Proposed Action except the Hybrid Alternative would involve mowing of a portion of the site, minimizing ground disturbance from disk and roll, and grading to 2,672 acres (1,082 hectares) of the Project site and along the gen-tie lines. Less fugitive dust would be generated. Construction emissions of criteria pollutants would increase due to mowing, based on a greater duration of equipment use. Dust generation during operation and maintenance would be reduced as compared with the Proposed Action.
Visual Resources			
Contrasting visual elements	Project features would be visible from Key Observation Points (KOPs). The Proposed Action is within Visual Resource Management (VRM) Class III area and would require an amendment to the 1998 Las Vegas RMP to Class IV for compatibility with the transmission facilities associated with the Project.	Maintaining the vegetation under the solar arrays (6,847 acres [2,771 hectares]) would reduce some contrast but most impacts would occur from the transmission facilities, which would be the same as for the Proposed Action.	Impact would be the same as the Proposed Action. Maintaining the vegetation under 65 percent of the solar arrays (4,390 acres [1,777 hectares]) would reduce some contrast but most impacts would occur from the transmission facilities, which would be the same as for the Proposed Action.
Acoustics			
Impacts on noise levels	Noise associated with construction, operation, and decommissioning would be negligible due the distance of the Project to sensitive residential receptors.	Same as the Proposed Action.	Same as the Proposed Action.
Cultural Resources			
Disturbance to archaeological or historic sites, including traditional cultural properties	Two National Register of Historic Places (NRHP)-eligible cultural sites, in development areas A and C, have the potential to be adversely affected by the Proposed Action. Previously undiscovered cultural resources could be impacted in areas of disk and roll and grading that disturbs the ground surface. Mitigation would minimize potential adverse effects.	The All Mowing Alternative could adversely affect three NRHP-eligible resources located in development areas A, B2, and C. The All Mowing Alternative would have the greatest reduction in potential for impacts on previously undiscovered cultural resources due to most of the development areas being left vegetated (and, thus, relatively undisturbed). This alternative includes the disturbance of 268 acres (108 hectares) of grading for roads and equipment areas in the Project site. Mitigation would minimize potential adverse effects.	The Hybrid Alternative could adversely affect two NRHP-eligible resources located in development areas A and C. The Hybrid Alternative would permanently remove 2,648 acres (1,072 hectares) of previously undisturbed native vegetation from the Project site by disk and roll, and grading. Mowing on 65 percent of the Project site (4,390 acres [1,777 hectares]) would result in less impacts on previously undiscovered cultural resources. Mitigation would minimize potential adverse effects.
Native American Concerns			

3 COMPARISON OF ALTERNATIVES

Potential Impact	Proposed Action	All Mowing Alternative	Hybrid Alternative
Loss of culturally-important plants and wildlife habitat	The Proposed Action would result in the loss of culturally-important plants, but none that are rare medical, or food source plants that cannot be found in the surrounding areas.	Native vegetation would remain on site except in utility areas and along roads, resulting in the least impacts.	The Hybrid Alternative would permanently remove 2,648 acres (1,072 hectares) of previously undisturbed native vegetation from the Project site by disk and roll, and grading. Mowing on 65 percent of the Project site (4,390 acres [1,777 hectares]) would reduce the loss of culturally important plants.
Old Spanish National Historic Trail			
Impacts on Old Spanish National Historic Trail	Development of the Project would result in modern, built features across a large portion of the valley in which the OSNHT occurs. The development of the solar facility would have adverse effects on the natural and cultural setting of the valley due to degree of modern change that it introduces. The California Wash would provide an opportunity for recreationalists to experience the OSNHT through the Project area unobstructed and with reduced visibility and awareness of the solar facility, as no solar development would occur within the wash (except for one road crossing and one overhead collector line crossing south of Valley of Fire Road). While the presence of the facility in the valley is an adverse impact on the OSNHT, the impressions of the traveler of modern intrusion on the setting would be reduced through use of the California Wash to experience the trail. Mitigation requires developing an MOA with NPS to define additional measures to minimize effects to the OSNHT and its purpose and primary uses.	Impacts would be similar to the Proposed Action, but modern visual intrusion as experienced from the California Wash would be reduced due to greater setbacks from the wash along development areas C and D.	Impacts would be similar to the Proposed Action.
Socioeconomics and Environmental Justice			
Employment	The workforce is expected to average of 500 to 700 workers (with a maximum of 900) during construction and 19 workers during operation. The work force is anticipated to be sourced from the labor pool within Clark County. The increased opportunity of employment would be considered beneficial to the local community.	Similar to the Proposed Action, but a larger workforce may be needed to construct the entire solar field with mowing. Greater job opportunities and benefits could result.	Similar to the Proposed Action but a larger workforce may be needed to construct 65 percent of the solar field with mowing. Greater job opportunities and benefits could result.
Economics	The employment associated with construction and operation of the Proposed Action would have beneficial effects beyond just labor income, and effects on the regional economy as a result of constructing the Proposed Action would be beneficial.	The larger workforce size, if needed, would result in greater economic benefit to the regional economy.	Similar to the All Mowing Alternative.
Housing	Vacancy rates of 10 percent (38,583 units) and availability of temporary accommodations would accommodate the potential influx of workers during construction. Effects on the housing market from operations and maintenance workers would be negligible.	Similar to the Proposed Action.	Similar to the Proposed Action.
Public services	The Proposed Action and influx of workers during construction would minimally affect public services. Additional public services would not be required due to construction or operation.	Similar to the Proposed Action.	Similar to the Proposed Action.

3 COMPARISON OF ALTERNATIVES

Potential Impact	Proposed Action	All Mowing Alternative	Hybrid Alternative
Disproportionate effects on minority or low-income populations	The Proposed Action would not result in a disproportionate effect on the minority population and low-income population of Native Americans on the Moapa River Indian Reservation. The employment associated with construction of the Proposed Action would have beneficial effects. Adverse health or cultural impacts are not anticipated.	Similar to the Proposed Action.	Similar to the Proposed Action.
Travel and Transportation Management			
Roadway operations	Under the Proposed Action during peak construction activity, roadways and freeways used to support the Project would operate at a volume lower than the LOS C capacity. Implementation of a Traffic and Transportation Plan would minimize impacts related to roadway operations and traffic hazards.	Similar to Proposed Action.	Similar to the Proposed Action.
Public Health and Safety			
Occupational Health and Safety	Adverse effects on workers could occur during construction, and operation and maintenance, and would be minimized through safety standards, protective equipment, and mitigation.	Same as the Proposed Action.	Same as the Proposed Action.
Electric and Magnetic Fields (EMF)	The closest residences are approximately 13 miles (21 kilometers) north of the Project site. No residences or other uses would be subject to EMF exposure from the proposed transmission interconnection line.	Same as the Proposed Action.	Same as the Proposed Action.
Environmental Site Contamination	No known spills or uncontrolled releases of hazardous materials or wastes, or other issues associated with chemicals were identified for the Project area. Mitigation would minimize the potential exposure of workers to existing unknown hazardous materials.	Same as the Proposed Action.	Same as the Proposed Action.
Risk of Hazardous Materials Accidents or Spills	Accidental spills of chemicals and fuels could occur during construction or operation and would be handled in accordance with the Spill Prevention, Control, and Countermeasure (SPCC) plan. Implementation of the SWPPP, mitigation measures, and compliance with regulations would minimize risk of hazards associated with accidents and spills.	Same as the Proposed Action.	Same as the Proposed Action.
Solid waste management	Solid waste generated during construction, operation, and decommissioning would not exceed the capacity of local landfills. Batteries and hazardous wastes would be disposed of in accordance with a Waste Management Plan.	Same as the Proposed Action.	Same as the Proposed Action.
Emergency response interferences	Construction could require short-term closure of I-15 during installation of the gen-tie lines. With proper coordination with the Nevada Department of Transportation and implementation of encroachment permit requirements, adverse effects would not occur. An Emergency Response Plan would be prepared to address worker evacuation in an emergency.	Same as the Proposed Action.	Same as the Proposed Action.

3 COMPARISON OF ALTERNATIVES

Potential Impact	Proposed Action	All Mowing Alternative	Hybrid Alternative
Public health	The Proposed Action would not increase risks of bringing West Nile Virus and Zika to the area. Implementation of mitigation measures to control fugitive dust would minimize the risk to workers of contracting valley fever.	Same as the Proposed Action.	Same as the Proposed Action.
Intentionally destructive acts	The risk to workers or the public from intentionally destructive acts is low. Public access would be controlled by security and fencing.	Same as the Proposed Action.	Same as the Proposed Action.
Fire risk	The Project area is within a low-risk area for fires and implementation of a Fire Prevention and Safety Plan would further minimize adverse effects related to fires.	Same as the Proposed Action.	Similar to the Proposed Action.

3 COMPARISON OF ALTERNATIVES

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3 NO ACTION ALTERNATIVE

CFR Section 1502.14(d) requires the alternatives analysis in the EIS to "include the alternative of no action." In this case, "No action" would mean the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward.

Under the No Action Alternative, the BLM would not authorize a ROW grant for the Project nor amend the 1998 Las Vegas RMP to identify the site as suitable for the proposed use. No solar arrays, substation, switchyard, collector routes, O&M facilities, or other Project components would be constructed.

Because the Project would not be approved, no new structures or facilities would be constructed, operated, maintained, or decommissioned on the site, and no related ground disturbance or other Project impacts would occur. The BLM would continue to manage the land consistent with the site's multiple use classification as described in the 1998 Las Vegas RMP. Based on the Solar Programmatic EIS Record of Decision, for future applications, the site would be identified primarily as variance areas open to future applications for solar development, subject to the procedures identified in the Solar PEIS. In the case of variance areas, future projects would still require a 1998 Las Vegas Resource Management Plan Amendment to move forward. These projects would be subject to applicable laws and land use plans.

3 NO ACTION ALTERNATIVE

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4 ALTERNATIVES CONSIDERED BUT REJECTED

4.1 OVERVIEW

In accordance with 43 CFR 2804.10, the BLM worked closely with the prior Applicant during the pre-application phase to identify appropriate locations and configurations for the Project. The BLM generally discourages applicants from including alternative BLM land locations with significant environmental concerns in their applications, such as critical habitat, Areas of Critical Environmental Concerns, Desert Wildlife Management Areas, designated OHV areas, wilderness study areas, and designated wilderness areas. Other alternative sites, technologies, and methods were considered but eliminated from detailed analysis based on the screening factors outlined in Section 2.4. Each rejected alternative is discussed below.

4.2 ON-SITE ALTERNATIVES

4.2.1 Other Portions of the 44,000-acre Application Area

The Applicant examined the 34,000 acres (13,759 hectares) of land within the 44,000-acre (17,806-hectare) ROW application area that are not proposed for development, to determine whether other suitable sites could be found within the application area for the Project. The criteria for a suitable solar site included access to highways, proximity to electric transmission lines, a relatively flat slope, and minimal visual conflicts.

Approximately 3,881 acres (1,571 hectares) of the application area were immediately ruled out due to a slope of greater than five percent. A relatively flat slope of five percent or less is necessary for siting of solar facilities. Large areas of the remaining application area were not considered due to proximity to slopes greater than five percent, which would disallow a contiguous area large enough to support a solar layout.

The remaining acres were then reviewed for feasibility as potential sites. Two relatively flat areas located on the northeast side of the application area, one south and one north of Valley of Fire Road, were reviewed. Both sites are in close proximity to Valley of Fire Road, providing suitable access. However, both sites are located adjacent to the eastern boundary of the application area, which abuts the Muddy Mountains. Proximity to the Muddy Mountains increases the scenic quality of these two sites, which would be more visible to recreationalists in the mountains. Development on these two sites would increase the visual impacts from the Project, therefore, these sites were eliminated from further review.

The southern portion of the application area includes a large swath of relatively flat land not included in the 10,000-acre (4,046-hectare) proposed development area that was reviewed for

4 ALTERNATIVES CONSIDERED BUT REJECTED

suitability. This area is located further from both I-15 and Valley of Fire Road than the proposed development, which would impede access and would locate the solar facility further from existing transmission lines, requiring construction of longer gen-tie lines. For these reasons, this area was eliminated from further consideration.

4.2.2 Alternative Configurations

For the reasons provided above, the area of development is limited to the proposed 10,670-acre (4,318-hectare) study area within the application area. Within the 10,670-acre (4,318-hectare) study area, various alternative configurations were developed that meet the basic purpose and need of the Project and are economically feasible, with considerations for site constraints such as biological resources, visual resources, recreation, Old Spanish Trail experience, and utilities. Alternative configurations that are at least 7,100 acres (2,873 hectares) are being considered as alternatives. Development area F was not included in any of the alternative configurations carried forward for analysis because of the large number of threecorner milkvetch found in the area.

4.2.3 Allowance for an Energy Corridor at the Tribal Boundary

The BLM suggested an alternative that eliminates development at the northern boundary of the Project site to allow for an energy corridor between the Project site and the Moapa River Indian Reservation. The energy corridor was considered but determined to be unnecessary due to the existing NV Energy utility corridor located approximately 2 miles (3.2 kilometers) west of the application area, on the west side of I-15. There is an additional west-wide energy corridor, designated by the BLM under the direction of Section 368 Energy Policy Act of 2005, that runs in a south-north direction within the eastern portion of the ROW application area. Given these two existing energy corridors within and adjacent to the Project application area, allowance for an additional energy corridor was not carried forward.

4.3 OFF-SITE ALTERNATIVES

4.3.1 Overview

Potential site alternatives to the Project were considered but not carried forward for detailed analysis, as described below.

4.3.2 Private Land Alternatives

The Applicant examined private land in the region to determine whether a suitable private site could be found for the Project. Much of the available private land in the region is parcelized and served by nearby utility systems to accommodate higher-intensity industrial uses, which renders the land too expensive for solar PV development. Additionally, 85 percent of the land mass in Nevada is owned by the federal government, limiting the amount of available private land available for development while increasing the cost of that land.

4 ALTERNATIVES CONSIDERED BUT REJECTED

Development of the Project on private land would not meet BLM's purpose and need to respond to the Applicant's application under Title V of the FLPMA for a ROW grant under the authorities or to meet BLM's goals to promote the responsible production of renewable energy on BLM-administered lands, and for the purposes described above.

4.3.3 Other BLM-Administrated Land Alternatives

4.3.3.1 Requirements for Other Site Alternatives

A successful 690-MW solar facility must have a number of characteristics. The property must have:

- At least 7,100 acres (2,873 hectares) of land
- Proximity to a transmission line with available capacity
- Vehicular access
- Limited environmental conflicts
- Good solar insolation
- Flat slope (under five percent)

Most BLM-administered land in the Project region was eliminated from consideration. These potential site alternatives would have responded to BLM's purpose and need; however, these potential site alternatives were rejected from detailed review because they did not meet the requirements listed above. Sites that meet these criteria, and why they were not considered, or are not a better alternative to the Project site are discussed below. Site selection was ultimately based on opportunity, given the availability of the existing ROW application from Bright Source, its size and flat topography, its proximity to the I-15, and existing major transmission infrastructure with available capacity adjacent to the site.

4.3.3.2 Review of Other Sites

A GIS-based search of variance areas within Clark County was conducted with the following constraints:

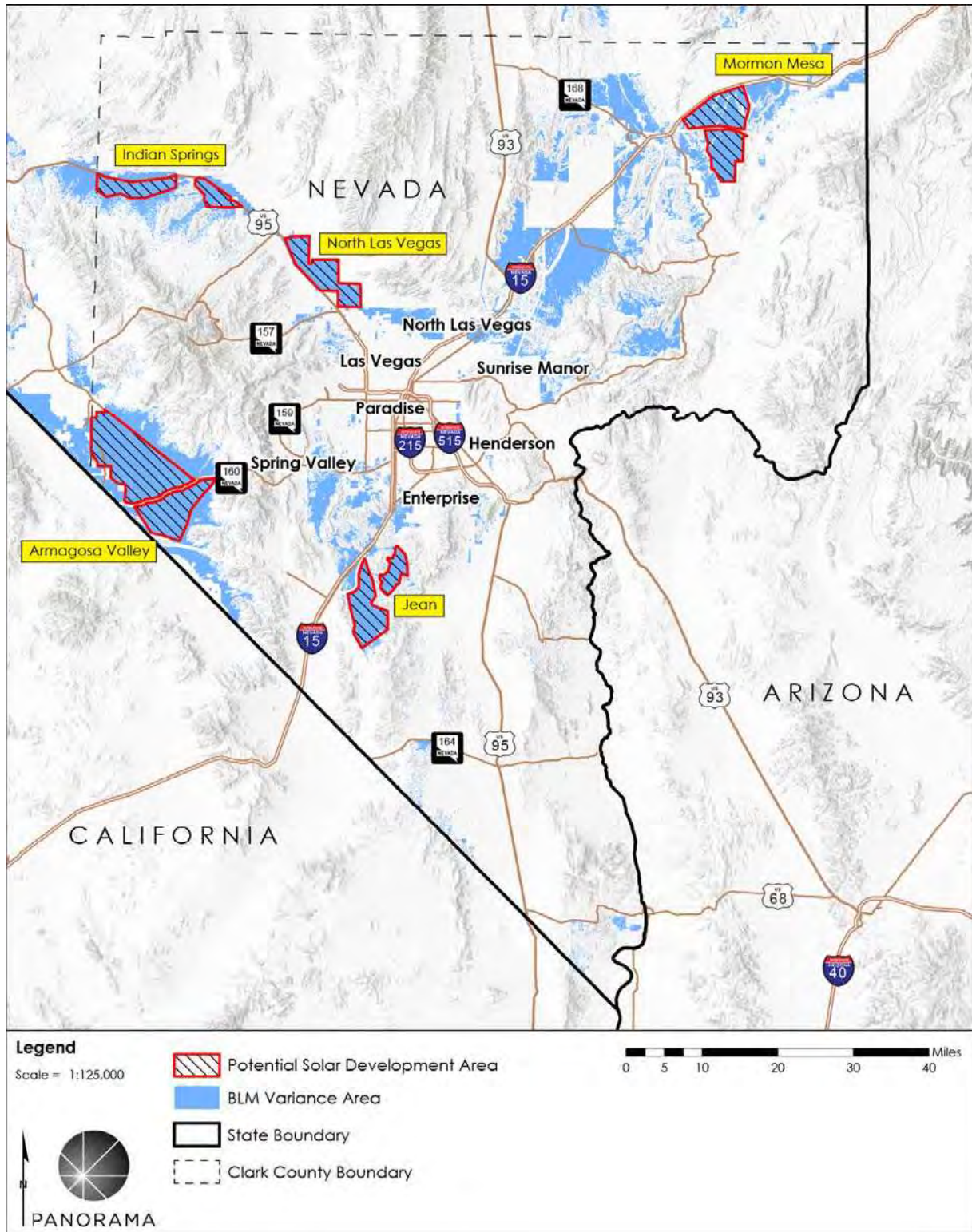
- Limited to variance areas identified in the Solar Programmatic EIS, only
- At least 7,100 contiguous developable acres (2,873 hectares) in the variance area
- Slopes less than five percent
- Does not already have a solar field on it
- Near a major transportation/transmission facility

The results of the search are shown in Figure 7. Five general areas were found to meet the criteria:

- Mormon Mesa (I-15)
- North Las Vegas (Highway 93)
- Indian Springs (Highway 93)
- Jean (I-15)
- Armargosa Valley (Highway 160)

4 ALTERNATIVES CONSIDERED BUT REJECTED

Figure 7 Clark County Potential Solar Development Areas



Sources: (Louis Berger Group, 2018; Esri, 2006; Tele Atlas North America, Inc., 2010; Bureau of Land Management, National Operations Center, National Applications Office, 2009; Airbus, USGS, NGA, NASA, CGIAR, NCEAS, NLS, OS, NMA, Geodatastyrelsen, GSA, GSI and the GIS User Community, 2018; USGS, 2017)

5 REFERENCES

4.3.3.3 Mormon Mesa

The Mormon Mesa area is located approximately 20 miles (32 kilometers) north of the Project site, on the southeast side of I-15. The Applicant currently has an application for this site and it may be developed in the future. The site itself includes the same constraints as the Project, including threecorner milkvetch habitat and desert tortoise habitat.

A segment of the congressionally designated Old Spanish Trail runs in an east-west direction through the Mormon Mesa site. Given the similar constraints to the Project site, the Mormon Mesa site was eliminated from further review as it is not a better alternative than the Project site.

4.3.3.4 North Las Vegas and Indian Springs

North Las Vegas and Indian Springs are two sites located along Highway 93, northwest of Las Vegas. Several ROW applications that overlap the North Las Vegas site were previously submitted, but the applications were withdrawn and closed. These applications include the following:

- Lone Valley LLC, 20-MW PV Solar Project Solar Facility
- First Solar Development LLC, Northwest Project Solar Facility
- First Solar Incorporated, Desert Jade Project Solar Facility

The Indian Springs site also has several overlapping closed ROW applications. One pending ROW application, the Southwest Solar Land Company LLC South Solar Ridge Solar Facility, is for 2,640 acres (1,068 hectares) and overlaps the Indians Springs area. Both the North Las Vegas and the Indian Springs sites are within priority 1 desert tortoise connectivity habitat, identified by United States Fish and Wildlife Service (USFWS). The North Las Vegas and Indian Springs sites were rejected based on the desert tortoise priority 1 habitat, which presents an environmental resource constraint similar to the Project. The Indian Springs site has a pending solar application and the land may not be available for development by the Project.

4.3.3.5 Jean

The Jean site is located approximately 30 miles (48 kilometers) south of Las Vegas, east of I-15 and adjacent to the Town of Jean. Several ROW applications were submitted within the Jean area, including:

- Solstar Gen IV LLC, Sloan Solar Right of Way
- Cogentrix Solar Services LLC, Primm Jean Solar Project Solar Facility
- Cogentrix Solar Services LLC, Primm, Clark Co. Solar Facility (overlapping the above application)
- Cogentrix Solar Services, LLC, McCullough Pass Solar Facility
- Element Power, Jean Solar Facility
- Bright Source Energy Solar, Nelson, NV Solar Facility

The applications for these developments were withdrawn by the applicants and then closed. For at least one of the applications, unsuitable on-site transmission infrastructure for solar

5 REFERENCES

development was the cited reason for withdrawal of the application. Clark County's Land Disposition Bill proposes to expand the current BLM disposal boundary, which would allow for the sale of federal lands for private development. The Jean site is partially within the disposal boundary expansion, as currently identified. The Jean site is also located within USFWS-designated priority 1 desert tortoise habitat and is popular for off-highway vehicle racing. For these reasons, this site alternative was eliminated from further consideration.

4.3.3.6 Armargosa Valley/Pahrump

The Amargosa Valley/Pahrump site is located approximately 10 miles (16 kilometers) south of Pahrump and 32 miles (51 kilometers) west of Las Vegas. The Yellow Pine Solar Project overlaps the Amargosa Valley/Pahrump site and proposes to develop approximately 3,000 acres (1,214 hectares) within a 9,290-acre (3,759-hectare) pending application area. The Copper Rays Solar Facility is a 2,560-acre (1,035-hectare) pending solar energy application adjacent to the Yellow Pine ROW application.

The Armargosa Valley/Pahrump site is located within USFWS-designated priority 2 desert tortoise habitat, defined as other blocks of habitat with the greatest potential to support populations of desert tortoises, outside least cost corridors (priority 1). Given the similar desert tortoise constraint as the Project site and the several pending applications within the Armargosa Valley site, this site was eliminated from further consideration.

4.3.4 Brownfield/Degraded Lands Alternatives

The United States Environmental Protection Agency tracks 480,000 contaminated sites for potential reuse for renewable energy development as part of its RE-Powering America's Lands Initiative. As with the private land alternatives described above, it would be technically possible to develop solar energy on these contaminated sites. However, there were no identified sites in the region that would be sufficiently large enough to support a 690-MW project with appropriate access to transmission lines and substations with adequate capacity.

4.4 TECHNOLOGY CONSIDERATIONS

4.4.1 Solar Thermal Power Generation

BrightSource's 2008 SF 299 application included a request for a ROW grant to develop a solar-thermal renewable energy power generation facility of up to 1,200-MW on approximately 12,000 acres (4,856 hectares) of the 44,000-acre (17,806-hectare) application area. One of the primary reasons for rejecting the solar thermal power option is that the economics of solar thermal are no longer cost competitive to solar PV. A solar thermal project would have similar or considerably greater environmental impacts related to biological resources, including on desert tortoises and birds; water consumption, as mirrors require washing; and visual impacts associated with glare from the mirrors and the high visibility of the 450-foot (137-meter) power towers (BrightSource Energy Inc. , 2008).

5 REFERENCES

4.4.2 Concentrated Photovoltaic Technology

CPV technology uses layers of wafers to absorb different wavelengths of sunlight and provide more power conversion efficiency than typical PV panels. This technology requires dual tracking technology to provide critical alignment with the direct sunlight in order to be efficient. CPV is generally mounted on taller structures than traditional PV (as high as 40 feet [12 meters] above the surface). Because this technology is relatively new, there are risks for long-term performance reliability and manufacturing capacity to supply large-scale utility projects has not been proven to date. Therefore, this alternative has not been carried forward for detailed analysis.

4.5 OTHER TYPES OF RENEWABLE ENERGY PROJECTS

Other types of renewable energy projects, including wind, geothermal, and other solar technologies, were rejected from detailed consideration because they would not meet BLM's purpose and need to respond to the Applicant's application under Title V of the FLPMA for a ROW grant to construct, operate, maintain, and decommission a solar PV facility on public lands.

4.6 DISTRIBUTED GENERATION

Distributed generation solar also was rejected from detailed consideration. Distributed generation refers to the installation of small-scale solar energy facilities at individual locations at or near the point of consumption (e.g., use of solar PV panels on a business or home to generate electricity for on-site consumption). Distributed generation systems typically generate less than 10-MW. To be a viable alternative to the Project, there would have to be sufficient newly installed solar panels to generate up to 690-MW of capacity, approximately the equivalent of 69 typical systems. The rate of PV manufacturing and installation is expected to continue to grow and larger distributed solar PV installations are becoming more common.

An alternative involving distributed generation was eliminated from detailed analysis because it would not respond to BLM's purpose and need for the Proposed Action, which is to respond to the Applicant's application for a ROW grant to construct, operate, and decommission a solar PV facility on public lands in compliance with FLPMA, BLM ROW regulations, and other federal applicable regulations. Additionally, distributed generation would not meet BLM's goals to promote the responsible production of renewable energy on BLM-administered lands. Current research indicates that development of both distributed generation and utility-scale solar power would be needed to meet future energy needs in the United States, along with other energy resources and energy efficiency technologies (NREL, 2010). For a variety of reasons (e.g., upper limits on integrating distributed generation into the electric grid, costs, lack of electricity storage in most systems, and continued dependency of buildings on grid-supplied power), distributed solar energy alone cannot meet the goals for renewable energy development. Ultimately, both utility-scale and distributed generation solar power would need to be deployed at increasing levels, and the highest penetration of solar power overall would

5 REFERENCES

require a combination of both types (NREL, 2010). Furthermore, the BLM has no authority or influence over the installation of distributed generation systems, other than on lands that it administers.

4.7 CONSERVATION AND DEMAND SIDE MANAGEMENT

This potential alternative to utility-scale solar PV energy development consists of a variety of approaches to reduce electricity use, including energy efficiency and conservation, building and appliance standards, and load management and fuel substitution. With population growth and increasing demand for energy, conservation and demand-side management alone is not sufficient to address energy needs. These efforts also do not respond to federal mandates to promote, expedite, and advance the production and transmission of environmentally sound energy resources, including renewable energy resources and in particular, cost-competitive solar energy systems at the utility scale. Accordingly, this potential alternative was rejected from detailed consideration. Conservation and demand-side management approaches also were rejected from detailed consideration because they would not meet BLM's purpose and need to respond to the Applicant's application under Title V of the FLPMA for a ROW grant to construct, operate, maintain, and decommission a solar PV facility on public lands. Additionally, conservation and demand-side management would not meet BLM's goals to promote the responsible production of renewable energy on BLM-administered lands. Furthermore, the BLM has no authority or influence over energy conservation and demand-side management, other than on lands that it administers.

5 REFERENCES

- Airbus, United States Geological Survey (USGS), National Geospatial-Intelligence Agency (NGA), National Aeronautics and Space Administration (NASA), Consultative Group on International Agricultural Research (CGIAR), National Center for Ecological Analysis and Synthesis (NCEAS), National Longitudinal Surveys (NLS), OS, NMA, Geodatastyrelsen, General Services Administration (GSA), GeoSpatial Innovations Inc. (GSI) and the Geographic Information System (GIS) User Community. 2018. "Terrain: Slope Map." World Elevation Terrain. Esri, June 20. BrightSource Energy Inc. (2008, January 28). SF-299 Application with Attachments. Oakland, CA, USA.
- Bureau of Land Management (BLM). (1998a, October). Record of Decision for the Approved Las Vegas Resource Management Plan and Final Environmental Impact Statement.
- BLM. (1998b). Energy Corridors GIS dataset. *Las Vegas Resource Management Plan*.
- BLM. (2018). GIS Data Layer for Proposed California Wash Area of Critical Environmental Concern.
- BLM, National Operations Center, National Applications Office. (2009, September 14). BLM Variance Area GIS dataset. *Surface Management Agency*.
- BLM and NPS. (2017). Old Spanish National Historic Trail Route GIS dataset. *OSNHT Conservation Strategy*.
- Clark County Nevada GIS Management Office. (2018). Street Centerline Database.
- Environmental Planning and Development (EPD) Solutions, Inc. (2017, December). Gemini Solar Project Elements CAD dataset.
- Environmental Systems Research Institute (Esri). (2006).
Global_Imagery_N_S_America_2006\shaded_relief. *SRTM Shaded Relief (Western North)*.
- Federal Emergency Management Agency (FEMA). (2018). *Flood Hazard Zones*. Retrieved from <https://hazards.fema.gov/gis/nfhl/rest/services/public/NFHLWMS/MapServer>
- Knight & Levitt Associates. (2018). National Register of Historic Places (NRHP)-Eligible Trace of the Old Spanish Trail Location. *Class III Cultural Resources Inventory of Approximately 11,050 Acres for the Gemini Solar Project, Near Crystal, Clark County, Nevada*.
- Louis Berger Group. (2018, October). Gemini Solar Project Elements CAD datasets.
- National Renewable Energy Laboratory (NREL). (2010). Energy Analysis. *Solar Power and the Electric Grid*. Retrieved from <https://www.nrel.gov/docs/fy10osti/45653.pdf>
- Phoenix Biological Consulting. (2018a). Vegetation Delineation GIS dataset.

5 REFERENCES

- Phoenix Biological Consulting. (2018b). Jurisdictional Waters Delineation GIS dataset.
- Solar Partners, XI, LLC. (2019, March). Plan of Development for the Gemini Solar Project N-84631. Las Vegas: Bureau of Land Management.
- Tele Atlas. (2010a, June 30). United States and Canada City Points. *Esri® Data & Maps: StreetMap*. Redlands, CA: Esri.
- Tele Atlas. (2010b, June 30). United States and Canada Lakes. *Esri® Data & Maps: StreetMap™*. Redlands, CA: Esri.
- The National Map and USGS. (2017, December 21). The National Atlas: Federal and Indian Land Areas. Redlands, CA: Esri.
- United States Department of Agriculture (USDA)-Farm Service Agency (FSA)-Aerial Photography Field Office (APFO). (2017). Nevada National Agriculture Imagery Program (NAIP) Imagery 2017.
- United States Geological Survey (USGS). (2017, August 14). USGS National Transportation Dataset (NTD) for Nevada 20170814 State or Territory FileGDB 10.1.
- Ventyx. (2010, March 26). United States Counties. *The Counties Intelligent Map*. Boulder, CO: Ventyx.

APPENDIX A LEGAL DESCRIPTION OF ALTERNATIVES

The development areas studied are located on the property identified below. This legal description includes the solar field, gen-tie lines, ancillary facilities, and BLM segment of Valley of Fire Road that would be used by the Project as primary access.

Mount Diablo Meridian, Nevada

T. 17 S., R. 64 E.,

sec. 10, S1/2;

sec. 11, S1/2;

sec. 12;

sec. 13;

sec. 14, N1/2 and SE1/4;

sec. 15, N1/2;

sec. 24, S1/2;

sec. 25;

sec. 26, SE1/4;

sec. 35;

sec. 36, E1/2 and SW1/4;

T. 17 S., R. 65 E.,

sec. 7;

sec. 8;

sec. 9;

sec. 10, W1/2;

sec. 14, W1/2;

sec. 16, W1/2;

secs. 15 thru 22;

sec. 23, W1/2;

sec. 28, W1/2;

secs. 29 thru 32;

sec. 33, W1/2;

T. 18 S., R. 64 E.,

sec. 1;

sec. 2;

sec. 3, SE1/4;

sec. 11;

sec. 12, NW1/4;

T. 18 S., R. 65 E.,

sec. 4, W1/2;

sec. 5;

sec. 6, NE1/4.

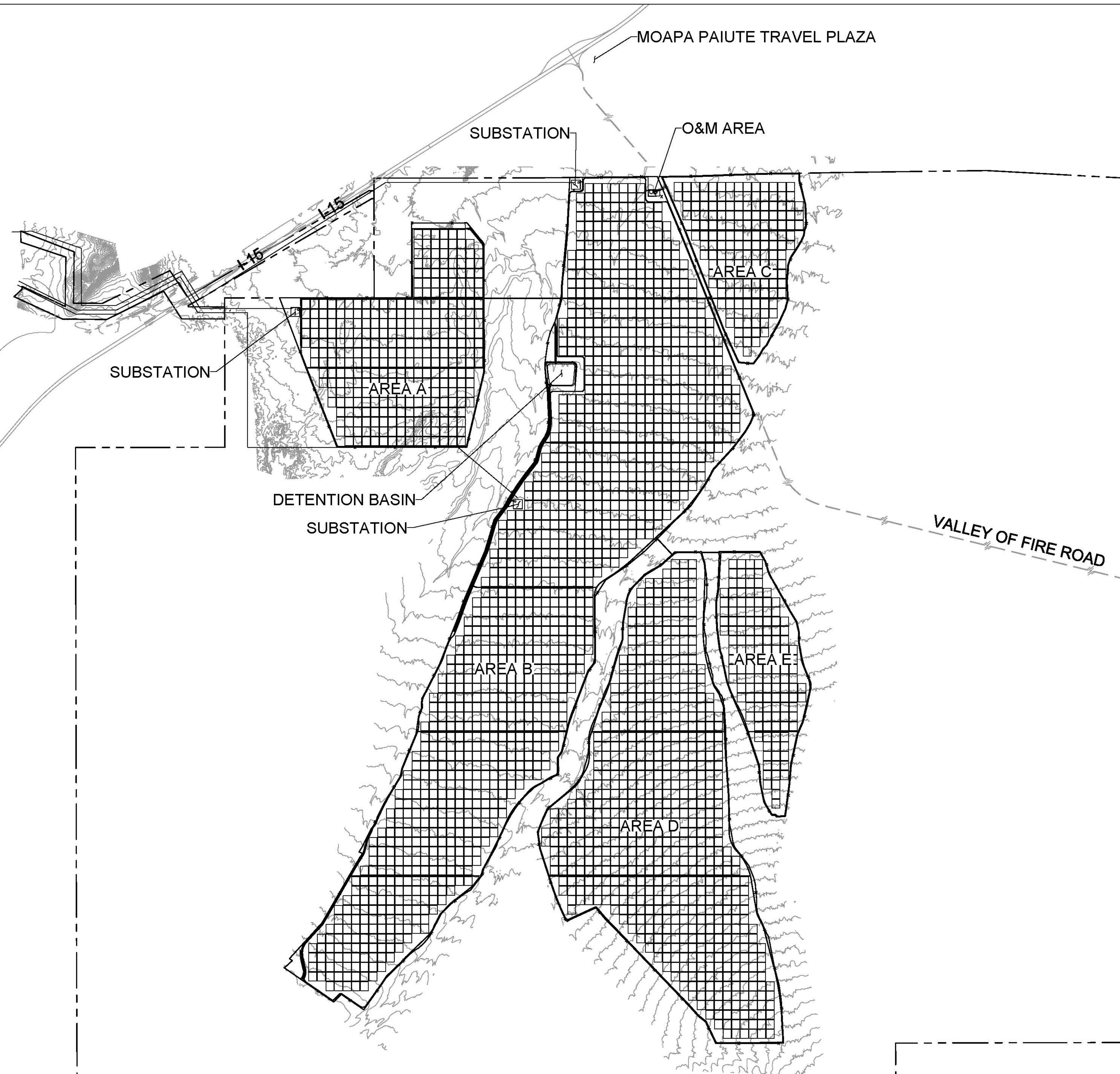
The areas described aggregate 10,692 acres (4,327 hectares).

The legal description would further encompass a water pipeline constructed from the Moapa River Indian Reservation to the Project site, if this water source is selected.

T. 16S., R. 65 E.,

sec. 31, W1/2 and SE ¼.

APPENDIX B SITE LAYOUTS FOR ALTERNATIVES

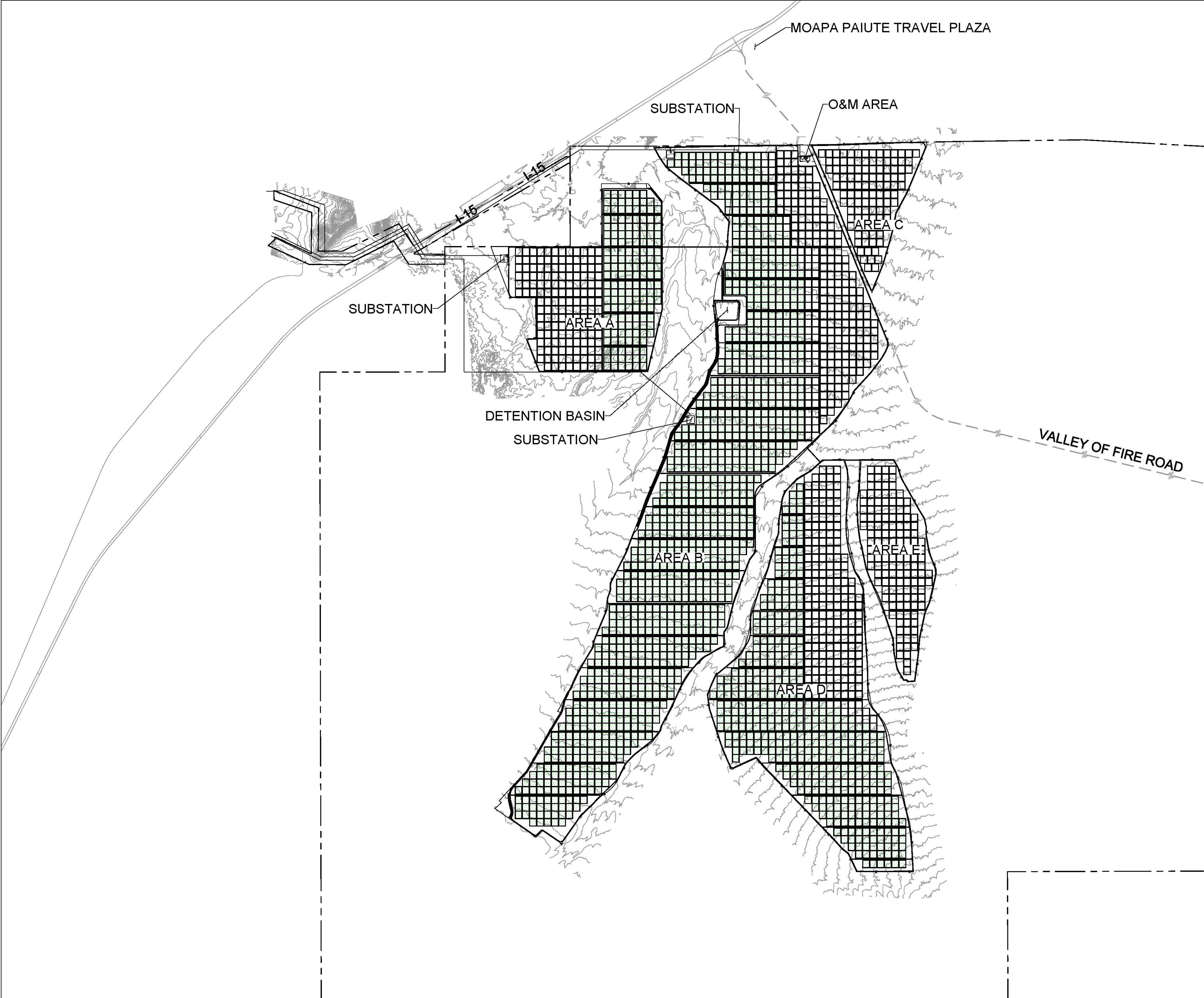


AREVIA
POWER

GEMINI SOLAR PROJECT
LAS VEGAS, NV, USA

LAS VEGAS, NV, USA PROPOSED ACTION	S STAMP
---	---------

[illegible]



12/13/2018 12:14 PM



GEMINI SOLAR PROJECT
LAS VEGAS, NV, USA

ENGINEER'S STAMP

GEMINI SOLAR PROJECT, LLC

LAS VEGAS, NV, USA

ALTERNATIVE 65% MOWING
35% TRADITIONAL

REVISIONS		DATE	DB	CB
REV	DESIGN #			

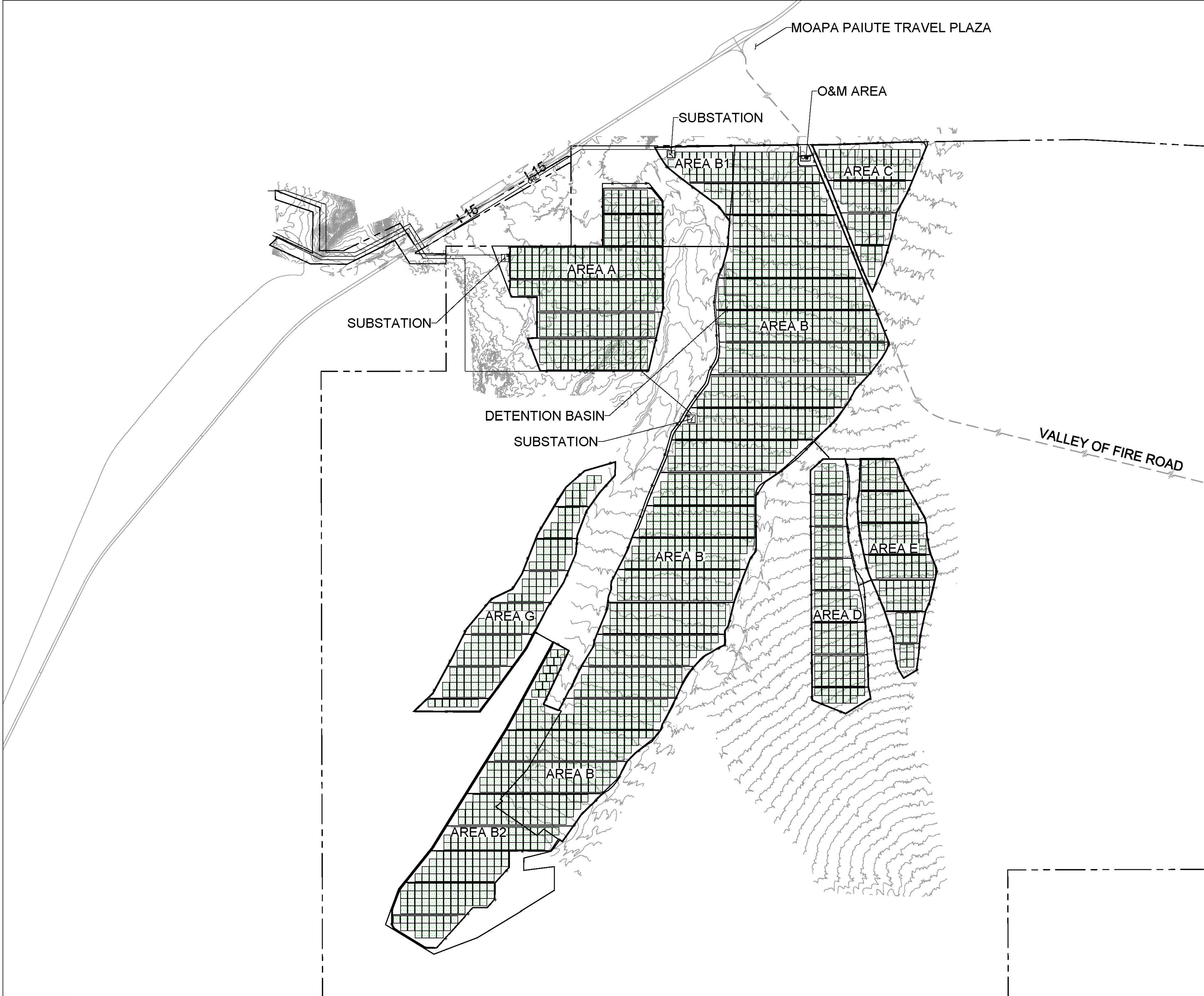
OPPORTUNITY	XXXX
PROJECT	XXX
DATE DRAWN	10/25/18
DRAWN BY	FME

0 1/2" 1"
IF BAR IS NOT ONE INCH, DRAWING IS NOT TO SCALE



Louis Berger
444 East Warm Springs Road, Suite 118, Las Vegas, Nevada 89119
Phone: 702.736.6632 Fax: 702.467.1305

GEMINI SOLAR PREFERRED ALTERNATIVE SITE PLAN.DWG



12/13/2018 12:10 PM



GEMINI SOLAR PROJECT
LAS VEGAS, NV, USA

ENGINEER'S STAMP

GEMINI SOLAR PROJECT, LLC

LAS VEGAS, NV, USA

ALTERNATIVE
ALL MOWING

REVISIONS		DATE	DB	CB
REV	DESCRIPTION			

OPPORTUNITY	XXXX
PROJECT	XXX
DATE DRAWN	10/25/18
DRAWN BY	FME

0 1/2" 1"
IF BAR IS NOT ONE INCH, DRAWING IS NOT TO SCALE



Louis Berger
444 East Warm Springs Road, Suite 118, Las Vegas, Nevada 89119
Phone: 702.736.6632 Fax: 702.467.1305

GEMINI SOLAR ALTERNATIVE B3 SITE PLAN.DWG

APPENDIX C ECONOMIC ANALYSIS OF MOWING ALTERNATIVES



Arevia Power
1044 10th Avenue
Redwood City, CA 94063

October 4, 2018

Bureau of Land Management
Southern Nevada District Office
4017 N. Torrey Pines Drive
Las Vegas, NV 89130
Attn: Gayle Marrs-Smith, Field Office Manager

Subject: Gemini Solar Project - Economic Viability Concern Regarding “Mowing” and Concerns Around Lack of Long-Term Effects of Desert Tortoise Reintroduction

Dear Ms. Marrs-Smith:

As you are aware, the BLM, in conjunction with guidance from the USFWS, is exploring two different types of construction methods for the Gemini Solar Project due to the presence of Desert Tortoises within the Gemini Solar Project site. The first is the “traditional” method of construction that requires either short or long-distance translocation of the Desert Tortoise population identified on the project site. The second is a new concept of “mowing” the project which would allow those portions of the project that employ this method to “reintroduce” Desert Tortoises after construction through slots in the security fencing. Although the “mowing” method is a less invasive approach to construction the nature of implementing a project in this manner would add *new* and *significant* costs which solar projects built in a “traditional” method do not incur. The purpose of this letter is to officially notify the BLM of the negative impact that mowing would have on the project, and to express Arevia Power’s (“Arevia”) concerns over the potential selection of an alternative requiring a new site preparation technique that is experimental in nature with unknown effects on the desert tortoise population.

NEPA Regulation Requires Rejection of Mowing of Significant Portions of the Gemini Solar Site

40 CFR Sec. 1502.14(a); Forty Questions no. 1a states that “Once the agency has considered a reasonable range of alternatives, it may reject others it reasonably concludes are: ‘infeasible, or inconsistent with the basic policy objectives for the action at issue’ (*State of South Carolina ex rel. Campbell v. O’Leary*, 64 F.3d 892, 900 (4th Cir. 1995) quoting *Headwaters v. Bureau of Land Management*, 914 F.2d 1174, 1180 (9th Cir. 1990)). The superiority of the preferred alternative is irrelevant to the reasonableness of a rejected alternative; the rejection of an alternative needs to be reasonable itself (*Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985)).



The concept of “reasonableness” is further evaluated in the BLM’s NEPA Handbook, which states that “Reasonable Alternatives include those that are practical or feasible from the technical and *economic* standpoint and using common sense, rather than simply desirable from the standpoint of the applicant”. Emphasis added. Accordingly, the economics of an alternative is a necessary part of the evaluation of that alternative, and, as set for below, mowing and reintroduction of significant portions of the Gemini Solar site (fifty percent or more), would render the project uneconomic and not viable.

Only one utility scale solar project to-date that has had “mowing” implemented as the site preparation technique - the Valley Electric Association (“VEA”) Community Solar Project, a 15MW solar project located near Pahrump, in Nye County, Nevada. Arevia obtained information regarding the costs associated with the VEA project, and, applying that information to the Gemini Solar Site, was able to determine the cost *adders* and *savers* that would result from the implementation of *any* mowing on the project site versus implementation of the traditional method of site preparation. The cost impact summary is as follows:

Mowing Cost Impacts Analysis (based on costs obtained from VEA Community Solar Project 15MW)	
	DC/watt
Addition of DT Openings in Fence (Adder)	\$0.0005
Longer Piles above grade (Adder)	\$0.0170
Labor (Adder)	\$0.0150
Interest During Construction Adder (due to increase in construction duration)	\$0.0045
Civil Work/ Site Prep (Savings)	-\$0.0100
SWPPP Costs (Savings)	-\$0.0050
Cost of Capital Risk to Adders (15% contingency)	\$0.0033
Total Cost Impact (\$/Wdc)	\$0.0253
Total Cost Impact per MW (1:1.5 AC/DC)	\$37,950
Total Cost Impact for 690MW (1:1.5 AC/DC)	\$26,185,500

Thus, based upon the only real-world experience with mowing and tortoise re-introduction, the cost to Arevia to mow and re-introduce a 690 MW project would be at least **\$26,185,500**.

The Gemini Solar Project has not yet secured a power purchase agreement (“PPA”) for the project, and, as you are aware, the project is sited in Nevada, one of the most competitive solar markets from a pricing perspective in the United States. The most recent renewables Request For Proposal solicitation conducted by NV Energy, a likely and natural buyer of the solar power from Gemini, contracted pricing as low as \$23.76 per megawatt hour with no escalator for over 25 years (*see* 2018 IRP filed with the PUCN in June of 2018). Adding \$0.0253 per watt DC in cost to the project is the equivalent of *adding* \$1.00 per megawatt hour to a 25-year PPA price which could be the difference between winning or losing a PPA opportunity in a hypercompetitive bid solicitation process. Therefore, imposing this additional cost to Gemini in an already ultracompetitive PPA environment renders the project much less competitive, perhaps to the point of being uneconomic. Accordingly, requiring mowing and reintroduction of such



significant portions of the Gemini Solar site that the project is rendered uneconomic is prohibited by 40 CFR Sec. 1502.14(a).

Lack of Long-Term Data on Mowing and Reintroduction

There is, to date, no hard data upon which to evaluate the longer term affects to the desert tortoise from the VEA project, the only project where mowing and introduction have been tried. As such, the mowing and reintroduction are *experimental* at best and need to be implemented cautiously and in a measured fashion. The VEA project is 80 acres. The Gemini Solar Project site will be approximately 7,100 acres. Currently two of the alternatives proposed by the BLM (100% mowing and 50% mowing) implements this methodology. ~7,100 acres (100%) and ~3,550 acres (50%) alternatives propose to implement mowing on a significantly grander scale, and indeed is a very *giant* step from the first attempt of 80 acres. A more reasonable approach would be 500-1000 acres of mowing (which is close to one of the alternatives proposed) which would allow for a significant increase over the 80-acre experiment being conducted at the VEA site, while attempting to minimize the Gemini Solar project from becoming uneconomic or unfinanceable.

Limiting the Area of Reintroduction Allows for Greater Percentage of Tortoises Short-Distance Translocated

Moreover, limiting mowing to 500-1000 acres can be complemented by more short-distance translocation which, based on Arevia's biologist expert's analysis, would *decrease* the density of desert tortoise in the area. By limiting mowing and reintroduction to 1000 or less acres, a much higher percentage of tortoises can be short-distance translocated, a concept that is regarded as highly preferable to longer distance translocation.

Conclusion

Mowing and reintroduction of 500-1000 acres of the Gemini Solar project, when combined with short-distance translocation is a win-win proposition in that it allows for study of these techniques in true "utility scale" solar facility setting, while not making the project either uneconomic and unfinanceable, and by limiting the number of tortoises subject to translocation, allowing for a much larger percentage of them to be short distance translocated.

Arevia appreciates your consideration of the contents of this letter and welcomes questions or further discussion on any of these issues.

Best Regards,

A handwritten signature in dark ink, appearing to read 'Ricardo Graf', is written over a light blue horizontal line.

Ricardo Graf
Managing Partner, CDO
Arevia Power
949.275.7538
ricardo@areviapower.com



United States Department of the Interior
NATIONAL PARK SERVICE
NATIONAL TRAILS INTERMOUNTAIN REGION
Branch Office
50 West Broadway Suite 950
Salt Lake City, Utah 84101



IN REPLY REFER TO:

IN REPLY REFER TO:

10.A (NTIR)

August 23, 2019

Mr. Augrelío Herman Pinales
E & I Project Manager
Bureau of Land Management
Las Vegas Field Office
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130

Dear Mr. Pinales:

We are in receipt of the draft Environmental Impact Statement (DEIS) for the Gemini Solar Project prepared by the Bureau of Land Management (BLM). The DEIS evaluates four alternatives: the Proposed Alternative (project area prepared in traditional manner), the All-Mowing Alternative (solar arrays set higher above the ground to facilitate mowing, as opposed to vegetation removal), the “Hybrid” Alternative (~35% traditional, ~65% mowing), and the No Action Alternative. BLM has indicated the Hybrid Alternative as the preferred alternative.

The BLM requested that we evaluate potential impacts of the project, propose specific mitigation measures that would offset those effects, and estimate the residual impact remaining post-mitigation. In doing so, we have provided a summary of the nationally significant resource that will be adversely impacted, summarized our view of the potential for effect to the Old Spanish National Historic Trail, and request specific additional information and analyses to be incorporated into the final EIS.

Old Spanish National Historic Trail California Crossing High Potential Segment

In December of 2012 the National Park Service and the Bureau of Land Management jointly issued the Comprehensive Administrative Strategy (CAS) for the Old Spanish NHT, which identified High Potential Historic Sites and High Potential Route Segments of the NHT. These include the California Crossing within the Area of Potential Effect of the proposed Gemini project as identified under the National Historic Preservation Act (NHPA). The California Crossing is identified as a High Potential segment for its nearly pristine historic era setting and feeling, the quality of the vicarious experience for visitors, and the potential for recreational opportunities in proximity to a major metropolitan area.

Potential for Effects

As noted in BLM's 6280 report, all action alternatives for the Gemini Solar Project will adversely affect the nature and purpose of the NHT. The action alternatives will affect the NHT as follows:

- **Setting** - Solar panels and associated infrastructure may draw focus away from the broader landscape and towards the 7,000-acre reflective array on the landscape. A3-1
- **Feeling** - Solar panels and associated infrastructure will change the current undeveloped and isolated feeling of the site. A3-2
- **Vicarious Experience** - The current setting and feeling of the site is largely identical to the setting and feeling that would have been experienced by travelers along the Trail, which allows visitors to approximate an authentic Trail experience. The proposed solar panels and associated infrastructure will alter the setting and feeling of the site. A3-3
- **Access and Recreation potential** - The proposed solar panels and associated infrastructure will restrict movement within the trail corridor, by creating one or two concentrated paths of travel that would not be reminiscent of the authentic Trail experience. A3-4
- **Interpretive Potential** - The California Crossing HP Segment is notable as a "jornada del muerte," or a "day's journey of death," due to the lack of water and the desolate nature of the landscape. Changing the nature of the landscape (via high impacts to the setting and feeling as discussed above) may significantly reduce the interpretive potential of the site. A3-5

Historic Remnant - Currently the historic remnant of the Old Spanish Trail located within the Old Spanish National Historic Trail corridor is undeveloped, but accessible by the public. As currently proposed, the solar panels and associated infrastructure will adversely affect this historic remnant of the Trail.

A3-6

Summary

The protected status of the Old Spanish National Historic Trail is established by its inclusion in the National Trails System Act, and is reiterated in the Omnibus Act of 2009, BLM Manual 6100, and BLM Manual 6280.

The draft EIS for the Gemini Solar Project states that all alternatives will result in substantial interference with the nature, purpose, and primary uses of the NHT (Gemini Solar Project Administrative Final EIS, Table ES-2, pages 3-142, 3-146, 3-147, 3-150 et al.); we note that two alternatives (the “Hybrid” and the “All Mowing”) are argued to have substantial but temporary interference.

The BLM requested that we evaluate potential impacts of the project, propose specific mitigation measures that would offset those effects, and estimate the residual impact remaining post-mitigation. We were unable to identify any on-site mitigation measures that would fully and adequately mitigate these adverse effects, although we did propose several measures that would lessen impact to the NHT. Likewise we were unable to identify a comparable segment(s) for possible acquisition as commensurate mitigation, although we did propose several “second best” options. On June 6, 2019 we provided this information to the BLM and on August 21, 2019 the BLM responded to our suggested mitigation measures. In all but two cases the BLM indicated that our proposed mitigation measures for Action alternatives were outside the scope of the project or could not be analyzed as they would result in additional impact to other resources. As such, we recommend the BLM provide further clarification as to what mitigation measures will adequately offset the impact of this undertaking on the Old Spanish NHT.

A3-7

A3-8

A3-9

A3-10

Sincerely,

Aaron Mahr
Superintendent
NPS, National Trails Intermountain Region



Letter Number A4

Fwd: [EXTERNAL] NDOW Comments on Gemini Solar DEIS

1 message

----- Forwarded message -----

From: **Matt Maples** <mmaples@ndow.org>

Date: Thu, Sep 5, 2019 at 2:01 PM

Subject: [EXTERNAL] NDOW Comments on Gemini Solar DEIS

To: blm_nv_sndg_geminisolar@blm.gov <blm_nv_sndg_geminisolar@blm.gov>

Cc: Jasmine Kleiber <jkleiber@ndow.org>

Hello, please find the attached comments on the Gemini Solar DEIS.

Thank you,
Matt



Matt Maples, Wildlife Staff Specialist

Nevada Department of Wildlife

6980 Sierra Center Parkway

Reno, Nevada 89511


(775) 688-1568

(775) 771-9135 Cell

mmaples@ndow.org

Support Nevada's Wildlife...Buy a Hunting and Fishing License

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 **GeminiSolar_Draft EIS Comments_090519.pdf**
192K



STEVE SISOLAK
Governor

State of Nevada

DEPARTMENT OF WILDLIFE

6980 Sierra Center Parkway, Suite 120
Reno, Nevada 89511
(775) 688-1500 • Fax (775) 688-1595

TONY WASLEY
Director

LIZ O'BRIEN
Deputy Director

JACK ROBB
Deputy Director

9/5/2019

Herman Pinales
BLM - Las Vegas Field Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130
(702) 515-5284
blm_nv_snd0_geminisolar@blm.gov

Dear Mr. Pinales,

The Nevada Department of Wildlife (NDOW) appreciates the opportunity to participate as a cooperating agency in project planning for the Gemini Solar Project, and has been closely collaborating with the BLM, U.S. Fish and Wildlife Service (FWS), and Arevia Power (on behalf of Solar Partners XI, LLC) throughout the NEPA process. Our comments will focus on project impacts to and management considerations concerning the desert tortoise (*Gopherus agassizii*), a species protected under the federal Endangered Species Act and the State of Nevada.

Baseline knowledge of the distribution and relative abundance of desert tortoise within the project area is fundamental to assess the potential impacts and develop avoidance and minimization measures for the project. The current estimate of desert tortoise within the project area changes based on differences within each alternative and may be influenced by detectability. Although translocation of resident desert tortoise from within the project area is an approved Best Management Practice (BMP) for the project, NDOW supports minimizing the number of long-distance translocations as they can disrupt tortoise social networks and create physiological stress on individual animals.

The Draft EIS includes three action alternatives and the required No Action Alternative. The Proposed Action Alternative includes clearing all vegetation and would require the highest number of long-distance translocations for desert tortoise. The number of long-distance translocations needed with this alternative is unrealistic given the limited number of qualifying recipient sites based on current FWS guidance. Further, this alternative results in complete habitat conversion and loss of ecosystem function within the project area. The All Mowing Alternative includes mowing vegetation to a height of 18 to 24 inches in areas where solar arrays would be installed and avoids traditional clearing. However, the areas included in this alternative would affect the highest total number of desert tortoise (254). The Hybrid Alternative (Preferred Alternative) includes mowing 65% of solar array areas and clearing the remaining 35% of the array areas. This alternative seeks to preserve some level of habitat function by reducing surface disturbance in the mowed areas and reduces the total number of affected tortoise (219) compared to the All Mowing Alternative.

The Hybrid Alternative will result in reduced biological impacts compared to the original Proposed Alternative and NDOW appreciates the BLM's identification of the Hybrid Alternative as the Preferred Alternative in the Draft EIS. Preliminary data from a small-scale project in southern Nevada suggest mowing may be conducive to maintaining habitat function and tortoise survival. Since mowing is a relatively new technique without long-term or large-scale data, this alternative also provides an opportunity to further investigate the utility of this technique. Development methods that preserve some level of habitat suitability and reduce impacts to desert tortoise provide an opportunity to increase

A4-1

A4-2

A4-3

A4-4

A4-5

A4-6

A4-7

compatibility of solar energy development with wildlife conservation. How mowing and presence of solar panels affects plant survival and function, temperature and shading, and tortoise survival and reproduction remain a question. As such, NDOW supports inclusion of a long-term monitoring plan and an adaptive management plan in the Final EIS to address these unknowns. We suggest these plans be coordinated among BLM, NDOW, and FWS and finalized before the Final EIS and Record of Decision. Additionally, we continue to support, when necessary, translocating tortoises immediately outside the perimeter fence or to the southernmost reaches of the larger 44,000-acre lease area rather than to long distance recipient sites. While it is a BMP, reducing long distance translocations has relevance to this and other pending projects because the number and capacity of recipient sites is limited.

A4-8

A4-9

We appreciate the level of coordination with the BLM, FWS, and the project proponent throughout the NEPA process to date.

Sincerely,



Jasmine C. Kleiber
Wildlife Staff Specialist, Habitat Division
Nevada Department of Wildlife

RE: Nevada State Clearinghouse Notice E2020-9 (E2020-9 EIS Gemini Solar Project - Clark County)

Letter Number A5

Deann M. McKay

Mon 7/29/2019 12:08 PM

To: NevadaClearinghouse <NevadaClearinghouse@lands.nv.gov>;

Good Afternoon Andre,

In reviewing the Gemini Solar Project below, its noted to be adjacent to the Valley of Fire State Park. Should any components of the project require use of state owned land, the proponent would need to submit an applicaon t o the Nevada Division of State Lands which can be found here:

http://lands.nv.gov/uploads/documents/APPLICATION_FORM_StateLands2019Fillable.pdf

Any quesons r egarding the use of state land can be directed to Deann McKay, (775)684-2729 or via email at dmckay@lands.nv.gov

Thank you for the opportunity to review this project.

Deann McKay

Deann McKay
Supervisory Land Agent
901 S. Stewart Street, Suite 5003
Carson City, NV 89701-5246

p: 775.684.2729

f: 775.684.2721

dmckay@lands.nv.gov

🕒 Mon-Fri 7:30am-4:30pm





Fwd: [EXTERNAL] Good Morning

1 message

----- Forwarded message -----

From: **Faye Milazzo** <FMilazzo@critdoj.com>

Date: Fri, Aug 23, 2019 at 11:42 AM

Subject: [EXTERNAL] Good Morning

To: blm_nv_sndg_geminisolar@blm.gov <blm_nv_sndg_geminisolar@blm.gov>

Cc: Rebecca Loudbear <rloudbear@critdoj.com>

Good Morning Mr. Pinales,

Attached to this email is a letter RE: Comments of the Colorado River Indian Tribes on the Draft Resource Management Plan. I was asked by Attorney General Rebecca Loudbear to send you this letter Via email to you. If you should have any questions regarding this email please do not hesitate to contact Rebecca at your earliest convenience. Have a Great Day!

Faye Milazzo
Paralegal

Colorado River Indian Tribes

[26600 Mohave Rd.](#)

[Parker, AZ 85344](#)

(P): 928-669-1271

(F): 928-669-5675



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L_Comments of the CRIT Resource Management Plan_082319.pdf
451K



COLORADO RIVER INDIAN TRIBES

Colorado River Indian Reservation

26600 MOHAVE ROAD
PARKER, ARIZONA 85344
TELEPHONE (928) 669-9211
FAX (928) 669-1216

Via Email Only

August 21, 2019

Herman Pinales
Energy & Infrastructure Project Manager
BLM Las Vegas Field Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130
blm_nv_snd@geminisolar@blm.gov

RE: Comments of the Colorado River Indian Tribes on the Draft Resource Management Plan Amendment/Environmental Impact Statement for the Gemini Solar Project

Dear Mr. Pinales:

On behalf of the Colorado River Indian Tribes (CRIT or the Tribes), I write to respond to your June 7, 2019 notification regarding the Draft Resource Management Plan Amendment and Draft Environmental Impact Statement (DRMPA/EIS) for the Gemini Solar Project (Project). The Tribes are concerned that BLM has not conducted the requisite "hard look" at environmental consequences of this project under the National Environmental Protection Act (NEPA) and the National Historic Preservation Act (NHPA), particularly those consequences related to cultural resources. BLM has also misrepresented the extent of its tribal consultation under Section 106. The Tribes thus urge BLM to comply fully with the consultation mandate of Section 106, clarify its efforts to date to gather tribal input, and provide a more thorough analysis of potential effects to Native American cultural resources in the final EIS.

A6-1

A6-2

As a preliminary matter, the Colorado River Indian Tribes are a federally recognized Indian tribe comprised of over 4,440 members belonging to the Mohave, Chemehuevi, Hopi and Navajo Tribes. The almost 300,000-acre Colorado River Indian Reservation sits astride the Colorado River between Blythe, California and Parker, Arizona. The ancestral homelands of the Tribes' members, however, extend far beyond the Reservation boundaries. Significant portions of public and private lands in California, Arizona, and Nevada were occupied by the ancestors of the Tribes' Mohave and Chemehuevi members since time immemorial. These landscapes remain imbued with substantial cultural, spiritual, and religious significance for the Tribes' current members and future generations. For this reason, we have a strong interest in ensuring that potential cultural resource and other environmental impacts associated with the proposed Gemini Solar Project are adequately considered and mitigated.

A6-3

Inadequate Analysis

NEPA requires BLM to take a “hard look” at the environmental consequences of a proposed action. This “hard look” mandate includes an assessment of ecological, aesthetic, historic, cultural, social, or health impacts and effects “whether direct, indirect, or cumulative.” 40 C.F.R. § 1508.8. The DRMPA/EIS falls short of this clear mandate. For many potential impacts, BLM’s analysis is cursory and makes few or no distinctions between alternatives. And even where it does distinguish between alternatives, analysis is similarly lacking.

A6-4

For example, CRIT is concerned about BLM’s analysis with respect to potential impacts on Mojave Desert tortoises—an endangered species important to CRIT and its members. The DRMPA/EIS summarily concludes that the “All Mowing” alternative and the hybrid alternative will allow the tortoises displaced by initial mowing of their habitat to return and inhabit the area once the Project is built. As various environmental groups have pointed out, this assertion is not supported by scientific analysis. *See, e.g., Desert Wildlands Need Your Voice in Vegas*, Mojave Desert Blog (July 20, 2019), <http://www.mojavedesertblog.com/2019/07/desert-wildlands-need-your-voice-in.html>; *see also* DRMPA/EIS at 3-86, 3-88 (noting that indirect effects may include disease or increased vulnerability to predation as a result of “translocation” but failing to specify the number of tortoises expected to be affected either during or after the move). BLM must realistically address the unavoidable and significant effects the Project will inflict upon this tortoise population—a species that BLM recognizes has cultural significance to local Indian tribes. DRMPA/EIS at 3-134.

A6-5

A6-6

The description of tribal concerns within the DRMPA/EIS, which at various points asserts that there will be no impact on tribes, is similarly cursory. Despite BLM’s acknowledgement that the area is of great religious and cultural importance to area tribes, *see* DRMPA/EIS App. F at viii-xiv (providing a detailed ethnography of tribes in the region), the DRMPA/EIS frequently dismisses concerns about “Native American” resources with almost no discussion. For example:

A6-7

- “Construction and operation of the Proposed Action would most likely result in the removal of plant species important to Native Americans,” but “[i]mpacts would not be adverse because the Project site does not support rare medicinal or food source plants that cannot be found in the surrounding areas.” DRMPA/EIS at 3-134, 3-135.
- “Desert tortoise is often mentioned by the Moapa Band of Paiutes as a species that should be protected and was once a food source. The Proposed Action would result in adverse impacts on desert tortoise.” *Id.* at 3-135. But one sentence later: “Construction and O&M would not have adverse effects on Native American religious concerns related to culturally important plants and animals.” *Id.* It is unclear how and where this “religious” analysis was conducted, but in any case, the “Native American” section lacks any further analysis of impacts on desert tortoise populations.
- Cumulative projects in the area “could affect known and unknown TCPs, resulting in a cumulative loss of resources considered by local tribes to be significant” and “could cumulatively affect the populations of plant and game species important to Native Americans,” but “would not be substantial.” *Id.* at 3-136. It is unclear how BLM arrived at the conclusion that cumulative projects would not produce a substantial impact, given that the DRMPA/EIS does not quantify other projects’ impacts.

A6-8

A6-9

A6-10

In fact, the DRMPA/EIS fails to provide any numerical or even anecdotal analysis of effects of other projects in the area on Native American cultural, plant, and wildlife resources. CRIT urges BLM to include such analysis in the final EIS because not only would it provide a clearer picture of the current impacts in the Project area, but it could also be instructive in estimating the impacts of this particular project.

A6-11

Cultural Resources

CRIT appreciates BLM's efforts to work with Moapa Band monitors to identify a prehistoric TCP site and establish an Environmental Exclusion Area (EEA) and buffer around the area to help minimize effects on local tribes. DRMPA/EIS at 3-127. However, as described below under "Consultation," the Tribes have concerns about the extent to which the DRMPA/EIS's cultural resource analysis actually incorporates input from other tribes with traditional ties to the project site. Absent the type of meaningful Section 106 consultation described below with *all* potentially-affected tribes, BLM's identification and analysis of cultural resources remains inadequate and underdeveloped. Likewise, BLM must specify in greater detail the cultural resource sensitivity training for archaeologists and how tribal consultants or monitors will be involved.

A6-12

A6-13

Despite BLM's proposed mitigation measures, the Tribes remain concerned about potential removal of artifacts from this area and the corresponding destruction of the Tribes' footprint on this landscape. In particular, CRIT appreciates efforts to minimize cultural resource harms in MM CR-2, but strongly opposes the use of data recovery as a mitigation measure on the grounds that such excavations undermine the Tribes' connection to their ancestral homeland. MM CR-2 should accordingly be revised to encourage in-situ or onsite reburial where avoidance is not possible.

A6-14

Consultation

Section 106 of the National Historic Preservation Act requires an agency "to consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to historic properties that may be affected by an undertaking." 36 C.F.R. § 800.2(c)(2)(ii). The Colorado River Indian Tribes has adopted a government-to-government consultation policy to clarify the requirements of adequate consultation under Section 106 and similar federal or state laws. *See* Exhibit 1. In particular, adequate consultation requires an in-person meeting between a decisionmaker "prepared with sufficient details about the proposed project or action, the Tribes' history, culture, and government, and the Tribes' anticipated or specific concerns with respect to the proposed action." *Id.* at 3-4. BLM has, to date, not complied with this mandate.

A6-15

BLM has acknowledged that eight tribes in the region have "traditional ties to the project site." DRMPA/EIS at 3-133. The agency has identified CRIT as one of these eight tribes, and represents that it conducted consultation with the Tribes on March 26, 2019. *See id.* at 3-133, tbl. 3.13-1. However, the DRMPA/EIS later states that BLM conducted "formal consultation" with seven tribal governments—and CRIT is noticeably absent. *Id.* at 4-1, 4-2. CRIT similarly cannot verify that the reported BLM outreach efforts took place. This is particularly troubling in light of the fact that the DRMPA/EIS relies on the assertions that "none [of the tribes listed in Table 3.13-1] have expressed specific concerns about the Project to date," *id.* at 3-134, and that "[m]ost tribes deferred to the Moapa Band of Paiutes for

A6-16

identifying issues and concerns,” *id.* at 4-1, in dispensing with the majority of the “Native American Concerns” related to the Project.

A6-16

While CRIT appreciates BLM’s acknowledgement of the need to consult with local tribes, the Tribes urge BLM to clarify the extent of the consultation conducted and to engage in meaningful consultation with CRIT and any other tribes with sacred ancestral lands within the planning area before proceeding with the RMPA/EIS’s cultural resource analysis. Under the mandate of Section 106, such government-to-government consultation must include BLM representatives with sufficient knowledge and decisionmaking authority and must be conducted in a manner that is respectful of tribal sovereignty. A mere letter or phone call is insufficient.

A6-17

Monitoring

Finally, the Tribes encourage BLM to clarify how local tribal representatives will be involved in monitoring during construction and operation of the Project. While the DRMPA/EIS notes that the Moapa Band has requested “the hiring of a tribal liaison,” BLM should more clearly commit to doing so and further specify what the role of this liaison will be. DRMPA/EIS at 4-1.

A6-18

Given that the Project will require disruptive excavation under any alternative, comprehensive monitoring is necessary. The DRMPA/EIS should be revised to clarify that archaeological monitoring *and* tribal monitoring will be required for *all* ground-disturbing activities, including grading, disc and roll, and pile of stake driving, mechanical excavation, drilling, digging, trenching, blasting, or other similar actions. To reduce impacts to the extent feasible, tribal monitors must be present for all the activities described above and whenever machines are active.

A6-19

Thank you for your consideration. To understand how these comments were taken into account in your decisionmaking, we ask for a written response prior to a final decision. Please copy the Tribes’ Attorney General Rebecca A. Loudbear, at rloudbear@critdoj.com, Deputy Attorney General Antoinette Flora, at aflora@critdoj.com and THPO Director Bryan Etsitty, at betsitty@crit-nsn.gov, on all correspondence to the Tribes.

Respectfully,



Dennis Patch
Chairman, Colorado River Indian Tribes

Cc: Tribal Council of the Colorado River Indian Tribes
Bryan Etsitty, THPO Director
Rebecca A. Loudbear, Attorney General, Colorado River Indian Tribes

EXHIBIT 1

Government-to-Government Consultation Policy of the Colorado River Indian Tribes

The federally recognized Colorado River Indian Tribes (CRIT or the Tribes) have over 4,000 active members from four distinct tribes – the Mohave, Chemehuevi, Hopi, and Navajo. The Tribes' reservation, which encompasses nearly 300,000 acres, straddles the Colorado River in both Arizona and California. The Tribes' ancestral homelands, however, extend far beyond the current reservation boundaries, into what is now public and private land in Arizona, California, and Nevada. As a result, the Tribes' cultural resources, including sacred sites, trails, and artifacts, are found beyond the reservation boundaries as well. The Tribes are deeply committed to the ongoing protection of such resources located both on- and off-reservation.

Federal law recognizes that CRIT is a sovereign government distinct from the United States. As a result of this status, the United States must engage in government-to-government consultation with the Tribes when actions or decisions of the United States have the potential to impact the Tribes, its government, tribal land, or cultural resources. This consultation must occur before the momentum toward any particular outcome becomes too great. The purpose of this government-to-government consultation must be to obtain CRIT's free, prior, and informed consent for such actions.¹ Desired outcomes include an ongoing, mutually beneficial relationship between federal agencies and the CRIT Tribal Council, deference to tribal sovereignty, and informed decision-making by both the United States and the Tribes. Federal agency staff and decision-makers must view consultation as more than listening and learning sessions with Tribal Council. Instead, there must be an ongoing, dynamic relationship between federal agencies and the Tribes that is built upon the agencies' concerted effort to understand the Tribes' history, culture, and government.

The Tribes have developed this policy paper to guide future government-to-government consultation with the United States and its administrative agencies.² This paper outlines CRIT's consultation rights and the specific characteristics that comprise minimally adequate consultation under federal law. This paper also offers additional suggestions to ensure that consultation is effective and mutually respectful.³ If federal agencies do not follow this policy, CRIT does not consider the communications from the agencies to meet the consultation requirements of tribal or federal law. Acknowledgement of this policy is required before an agency schedules a government-to-government meeting with Tribal Council. CRIT is committed to seeking recourse

¹ United Nations Declaration of the Rights of Indigenous Peoples, Articles 19 and 32; *see also* 36 C.F.R. § 800.1(f) (defining "consultation" as "the process of seeking, discussing, and considering the views of other participants, and where feasible, seeking agreement with them."); BLM Manual Handbook H-8120-1 at I-2 (consultation includes "[t]reating tribal information as a necessary factor in defining the range of acceptable public-land management options.").

² 36 C.F.R. § 800.4(c)(2)(ii)(C); 43 C.F.R. § 10.5(d)(3); Improving Tribal Consultation and Tribal Involvement in Federal Infrastructure Decisions (January 2017) ("Improving Tribal Consultation"), Key Principle 8.

³ Required actions are distinguished from recommended actions by use of the words "must" and "shall" versus "should."

through all available political, legal, and media channels if this request is denied or if the agency fails to comply with this policy.

Why A Formal Process is Needed

Federal agencies (including the Department of the Interior, Bureau of Land Management, and Bureau of Indian Affairs) have consistently failed to engage in adequate government-to-government consultation with CRIT and other tribes. The United States recently recognized this troubled history in suggesting needed modifications to the consultation process.⁴ In CRIT's experience, agencies have asked for substantive tribal comments on project and policy documents after those projects and policies have already been approved or implemented. Agency staff and decision-makers have attended meetings with Tribal Council without adequate information or authority to meaningfully respond to the Tribes' concerns. Agencies have repeatedly refused to provide responses to CRIT's comments, including any explanation for why CRIT's requests cannot be accommodated. These failures have resulted in direct harm to CRIT, its members, and cultural resources of great importance to the Tribes.

As one example, BLM authorized construction of the nearly 2,000-acre Genesis Solar Energy Project on land once occupied by the ancestors of CRIT's Mohave members. The project involved significant grading along the shoreline of Ford Dry Lake, resulting in the removal of over 3,000 cultural resources over the vehement objections of the Tribes. These artifacts are now stored at the San Bernardino County Museum with no access for CRIT members. In accordance with cultural, spiritual, and religious practices, CRIT has repeatedly asked BLM to permit reburial of the Genesis artifacts, as well as any other artifacts that are inadvertently disturbed within the ancestral homeland. Yet, BLM has refused to engage in government-to-government consultation on this critical topic. Letters have been left unanswered, harmful agency policies have been issued without advance notice or consultation, and BLM officials have been unprepared to discuss their position when in-person meetings have occurred. These consultation failures have resulted in severe and ongoing harm to CRIT and its members.

Basis of Consultation Right

The fundamental principle underlying CRIT's right to meaningful consultation with the United States is the Indian trust doctrine. Pursuant to this doctrine, the United States has a fiduciary duty over tribal lands and resources as Indian trust assets.⁵ As part of this duty, the United States has an obligation to consult with CRIT about federal actions that have the potential to impact these assets or other attributes of tribal sovereignty. For CRIT, tribal sovereignty includes an obligation to protect tribal and cultural resources that are located in the ancestral homelands of CRIT members.

⁴ Improving Tribal Consultation, at 1-5.

⁵ *Seminole Nation v. United States*, 316 U.S. 286, 296-97 (1942); *Pit River Tribe v. U.S. Forest Service*, 469 F.3d 768, 788 (9th Cir. 2006); *Navajo Tribe of Indians v. United States*, 364 F.2d 320, 322 (Ct. Cl. 1966).

This fundamental consultation right is engendered in federal statutes,⁶ executive orders,⁷ and agency policies.⁸ These laws help implement and explain the consultation right that stems from the Indian trust doctrine, but do not diminish it.⁹ Where appropriate, CRIT relies on these laws to support its definition of adequate consultation.

Characteristics of Adequate Consultation

Tribal Sovereignty. Government-to-government consultation must respect tribal sovereignty.¹⁰ The federal government shall not treat consultation as a “box to be checked,” but as a meaningful dialogue intended to result in consensus between the United States and the Tribes.

Addressing Tribal Concerns. The federal government shall timely seek and review CRIT’s written and oral comments and provide comprehensive responses to Tribal concerns and requests.¹¹ Responses to written comments should generally be provided before any in-person government-to-government consultation. Prior to reaching its final decision, a federal agency must explain how that decision addresses CRIT’s concerns.¹² Where an agency is unable to fully address CRIT’s concerns, the agency shall clearly explain its reasoning based on the legal, practical, or policy constraints on its decision-making.¹³ If CRIT has articulated its concerns in writing, this explanation should be in writing as well.

Involved Parties. Government-to-government consultation requires an in-person meeting between CRIT Tribal Council and the agency decision-maker with ultimate authority for a proposed project or action.¹⁴ This decision-maker must be prepared with sufficient details about the proposed project or action, the Tribes’ history, culture and government, and the Tribes’

⁶ See, e.g., National Historic Preservation Act (NHPA), 54 U.S.C. §§ 302701(e), 302706(b); 36 C.F.R. § 800.5(a); Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. §§ 3002(b)-(c), 3003(b), 3004(b), 3005(a)(3); 43 C.F.R. § 10.5; Archaeological Resources Protection Act (ARPA), 43 U.S.C. § 2401(a); 43 C.F.R. §§ 7.7(b)(4), 7.16(b)(2)-(3).e

⁷ Executive Orders 12875, 13007, 13175; September 23, 2004 “Memorandum on Government-to-Government Relationship with Tribal Governments”; November 9, 2009 “Memorandum for the Heads of Executive Departments and Agencies.”

⁸ Secretarial Order 3317 § (b); Department of the Interior Policy on Consultation with Indian Tribes; BLM Manual 8210: Tribal Consultation under Cultural Resource Authorities; Bureau of Indian Affairs Government-to-Government Consultation Policy (BIA Consultation Policy) at V.1-3.

⁹ 36 C.F.R. § 800.4(c)(2)(ii)(B); Executive Order 13175, § 2.

¹⁰ 36 C.F.R. § 800.4(c)(2)(ii)(B); BLM Manual 8120 at .08(A) (“The special legal status of tribal governments requires that official relations with BLM . . . shall be conducted on a government-to-government basis.”).

¹¹ Executive Order 13175, §§ 5(b)(2)(B), 5(c)(2); Improving Tribal Consultation, Key Principle 6.

¹² BLM Manual 8120, Glossary of Terms (“consultation” defined to include “documenting the manner in which the [tribal] input affected the specific management decision(s) at issue.”); BLM Manual Handbook H-8120-1 at I-1; Improving Tribal Consultation, Key Principle 6.

¹³ BLM Manual 8120 at .06(E) (“Field Office Managers and staff . . . shall document all consultation efforts.”); Improving Tribal Consultation, Key Principle 6.

¹⁴ See, e.g., 36 C.F.R. § 800.2(a); BIA Consultation Policy at VI.A(4); BLM Manual 8210 at .06(A).

anticipated or specific concerns with respect to the proposed project or action.¹⁵ This decision-maker should also have formal training regarding tribal sovereignty, the Indian trust doctrine, and other aspects of federal Indian law. The agency should use its staff to communicate project information to CRIT and its staff and to prepare the agency decision-maker for the government-to-government consultation. For example, prior to meeting with CRIT Tribal Council, it is the Tribes' expectation that agency staff will have provided baseline information about the project and its potential impacts to Tribal staff, such as survey results and ethnographic reports. However, CRIT does not recognize staff-to-staff discussions or communications as fulfilling the federal government's consultation responsibility.¹⁶

In addition, communications between CRIT and project applicants or proponents (where such applicants or proponents are not federal entities) are not government-to-government consultation. Such communications, however, can help to convey information and reduce conflict. Unless requested by CRIT, federal agencies shall not interfere with such communications. Finally, meetings held with representatives from multiple tribes do not constitute consultation with CRIT unless CRIT expressly agrees that consultation format.¹⁷

Timing. Government-to-government consultation must occur as early as practicable, so that tribal concerns can be taken into account before the momentum toward a particular project or action is too great.¹⁸ Federal agencies should provide basic information about a project or action and its potential impacts to CRIT as soon as the agency begins initial planning for a project or action or a private entity approaches the agency to submit an application.¹⁹ Federal agencies should keep CRIT apprised of the decision-making timeline so that the Tribes can participate at appropriate junctures. Federal agencies shall continue to consult with Tribes until they make a decision on the proposed project or action, and if requested by the Tribes or required by law, until construction or implementation of the project or action is complete.

¹⁵ See also *Pueblo of Sandia v. United States*, 50 F.3d 856, 860, 862 (10th Cir. 1995) (Section 106a "mandates an informed consultation."); BLM Manual 8120 at .06(c) ("Field Office Managers shall recognize that traditional tribal practices and beliefs are an important, living part of our Nation's heritage, and shall develop the capability to address their potential disruption . . ."); BLM Manual Handbook H-8120-1 at I-2 ("BLM's representative must be authorized to speak for the BLM and must be adequately knowledgeable about the matter at hand."); Improving Tribal Consultation, Key Principle 5.

¹⁶ *Quechan Tribe of the Fort Yuma Indian Reservation v. U.S. Dep't of Interior*, 755 F. Supp. 2d 1104, a 1118-19 (S.D. Cal. 2010).

¹⁷ *Id.*

¹⁸ 16 U.S.C. §§ 470a(d)(6), 470f (requiring consideration of historic resource impacts "*prior to the approval of . . . the undertaking*") (emphasis added); 36 C.F.R. §§ 800.1(c), 800.4(c)(2)(ii)(A); Executive Order 13175, §§ 5(b)(2)(A), 5(c)(1); Secretarial Order 3317, U.S. Dept. of the Interior, § 4(a); Dep't of the Interior Tribal Consultation Policy at 7-8; BIA Consultation Policy at VI.A; BLM Manual 8120 at .02(B) (consultation must "[e]nsure that tribal issues and concerns are given legally adequate consideration *during* decision-making") (emphasis added); BLM Handbook Manual H-8120-1 at V-5 (" . . . the BLM manager should initiate appropriate consultation with potentially affected Native Americans, as soon as possible after the general outlines of the land use plan or the proposed land use decision can be described.").

¹⁹ Improving Tribal Consultation, Key Principle 3. a

Scope of Consultation. Federal agencies must be willing to engage in consultation on any potential impacts of a proposed project or action to CRIT, its members, its land, or its cultural resources.²⁰ Consultation shall not be limited to potential impacts to properties eligible for listing on the National Register of Historic Places²¹ or equivalent state registers, or protected by the Native American Graves Protection and Repatriation Act. If federal approval is needed for only a portion of a proposed project or action, the agency shall nevertheless consult on potential impacts from the whole of the project or action. Federal agencies should not expect CRIT to provide information about impacts to cultural resources in scientific terms and should weigh the Tribe's cultural, spiritual, historical, and anthropological input with the respect and deference that it is due.²²

Confidentiality. Information obtained via government-to-government consultation shall be kept confidential, except to the extent that CRIT provides information in a public forum (such as via a letter submitted during a comment period or comments made at a hearing) and to the extent such information must be revealed pursuant to federal or other applicable law.²³ If a federal agency determines that confidential information obtained from CRIT must be revealed, the agency shall inform CRIT prior to the release and make all reasonable attempts to limit its scope. Federal agencies shall acknowledge that confidential information is not limited to the location of sites eligible for listing on the National Register of Historic Places²⁴ or protected by the Native American Graves Protection and Repatriation Act, but includes any information about sensitive resources, culture, or religious beliefs, obtained through consultation.

Resources. Federal agencies must recognize that government-to-government consultation consumes scarce tribal resources. Agencies should minimize costs to CRIT by conducting government-to-government consultation meetings in Parker, Arizona²⁵; providing clear and succinct information about proposed projects or actions and their potential impacts; and ensuring that agency staff document CRIT's interests and concerns. CRIT should not be required to repeatedly provide the same information to an agency because of agency staff turnover. Agencies should explore funding sources to remunerate the Tribes for participating in consultation.

Key Requirements

To aid in implementation of this policy, agency officials shall ensure their government-to-government consultation efforts comport with this summary of key requirements:

- Initiate consultation as early as practicable.
- Timely seek and review CRIT's written and oral comments.

²⁰ Executive Order 13175, § 1(a).

²¹ 36 C.F.R. § 800.4(c)(2)(ii).

²² See, e.g., BLM Manual Handbook B-8120-1 at II-5.

²³ See 36 C.F.R. §§ 800.4(a)(4), 800.11(c); see also BLM Manual 8120 at .06(G).

²⁴ 36 C.F.R. § 800.4(c)(2)(ii)(A); see also BLM Manual Handbook H-8120-1 at V-1.

²⁵ Improving Tribal Consultation, Key Principle 4.

- Provide comprehensive responses to Tribal concerns and requests in the same format as such concerns and requests were provided to the agency.
- Explain agency decisions based on legal, practical, and policy constraints on decision-making.
- Involve agency decision-makers with ultimate authority in in-person consultation meetings.
- Sufficiently prepare for in-person consultation meetings with Tribal Council to be able to respond to and address the Tribes' concerns.
- Do not claim that communication with CRIT staff, between CRIT and project applicants, or in the presence of multiple tribes is government-to-government consultation.
- Consult on any potential impacts of a proposed project or action on CRIT, its members, its land, or its cultural resources.
- Keep information obtained via government-to-government consultation confidential.

MOAPA BAND OF PAIUTES

MOAPA RIVER INDIAN RESERVATION

BOX 340

MOAPA, NEVADA 89025

TELEPHONE (702) 865-2787

FAX (702) 865-2875

Via First Class Mail and Email

August 1, 2019

Herman Pinales, Project Manager
Bureau of Land Management
Southern Nevada District Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130
Email: blm_nv_geminisolar@blm.gov

RE: Request for Extension of Comment Period- Draft RMPA/EIS for the Gemini Solar Project

Dear Mr. Pinales:

The Moapa Band of Paiute Indians ("Tribe") has become aware of BLM's release of a draft environmental impact statement ("DEIS") related to the Gemini Solar project. BLM provided 90 days for comments on the DEIS, ending on September 5, 2019.

The Gemini Project is slated to occupy and impact at least 7,100 acres of land immediately adjacent to the Tribe's Reservation. In addition, the current right-of-way application covers an area over 6 times as large—44,000 acres total. This is a vast amount of land directly south of the Reservation. The Tribe is currently working with Gemini's developer, Arevia, to better understand the Gemini Project and whether the Tribe's interests in the area can be protected. Those discussions are not yet complete.

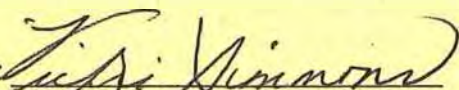
Furthermore, the Tribe is also working with Clark County and other local stakeholders to advance federal legislation that may impact the Gemini Project area. One proposal being considered is for Congress to convey a portion of the lands covered by the right-of-way application from federal ownership to the Tribe's ownership.

For these reasons, the Tribe respectfully requests that BLM extend the comment period for the DEIS by an additional 60 days. This extra time will allow the Tribe to better assess the proposed action and BLM's environmental analysis, to work with Arevia and other stakeholders to resolve concerns, and provide constructive comments to BLM.

Sincerely,

MOAPA BUSINESS COUNCIL

BY:


Vickie Simmons, Chairman

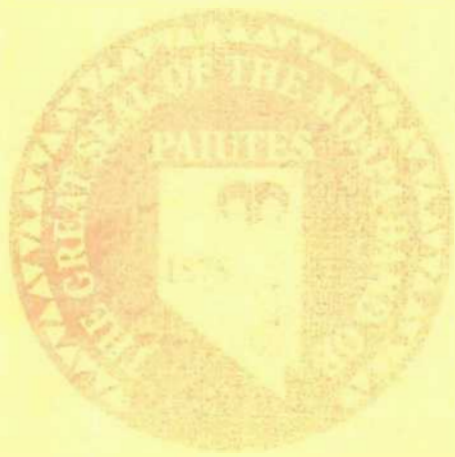
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MOAPA BAND OF PAIUTES

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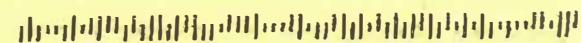


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Herman Pinales, Project Manager
Bureau of Land Management
Southern Nevada District Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130

89130-230101





Fwd: [EXTERNAL] Draft Environmental Impact Statement (EIS) for the Gemini Solar Project in Clark County, NV

From: **Brenda Whitfield** <WHITFIELD@clarkcountynv.gov>
Date: Wed, Jun 12, 2019 at 3:57 PM
Subject: [EXTERNAL] Draft Environmental Impact Statement (EIS) for the Gemini Solar Project in Clark County, NV
To: blm_nv_sndg_geminisolar@blm.gov <blm_nv_sndg_geminisolar@blm.gov>
Cc: Russell Merle <MERLE@clarkcountynv.gov>, Rodney Langston <LANGSTON@clarkcountynv.gov>, Robert Tekniepe <Tekniepe@clarkcountynv.gov>

Dear Mr. Pinales,

Thank you for the opportunity to respond to the Notice of Availability of the Draft Resource Management Plan Amendment and Draft Environmental Impact Statement (EIS) for the Gemini Solar Project in Clark County, NV. The Department of Air Quality's response is attached.

If you have questions or need additional information let us know.

Sincerely,

Brenda Whitfield

Air Quality Specialist II

Clark County Department of Air Quality

Planning Division

4701 W. Russell Road, Suite 200

Las Vegas, NV 89118

whitfield@clarkcountynv.gov

June 12, 2019

Herman Pinales
Energy and Infrastructure Project Manager
BLM Las Vegas Field Office
4701 North Torrey Pines Drive
Las Vegas, NV 89130-2301

E-mail: blm_nv_sndg_geminisolar@blm.gov

Re: Notice of Availability of the Draft Resource Management Plan and Draft Environmental Impact Statement for the Gemini Solar Project in Clark County, NV.

Dear Mr. Pinales:

The Department of Air Quality (DAQ) has reviewed the Amendment and Draft Environmental Impact Statement for the Gemini Solar Project in Clark County NV. The applicant, Solar Partners XI, LLC (Arevia) has proposed to construct, operate, maintain, and decommission a 690 megawatt solar electric generating facility and associated generation tie-line and access road facilities. The site is located on approximately 7,115 acres of Federal land administered by the Bureau of Land Management (BLM). The solar facility would be located approximately 33 miles northeast of Las Vegas Valley directly south of the Moapa Indian Reservation.

DAQ determines that this action should have no significant impact to ambient air quality. The project is located within Hydrographic Area 216, Apex Valley (HA-16), which is in attainment or unclassified for all criteria pollutants. PM₁₀ is the pollutant primarily associated with construction activities and there are several provisions of the Clark County Air Quality Regulations (AQRs) that regulate proposed construction within Clark County. In particular, the following regulatory requirements may apply depending upon the type of activities taking place at the construction site. In addition, and at a minimum, construction activities taking place will be subject to all applicable (AQRs). These may include the following sections:

Section 94 of the AQRs requires that a dust control permit be obtained prior to: (i) soil disturbance or construction activities that impact 0.25 acres or greater, (ii) mechanized trenching 100 feet or greater in length, or (iii) mechanical demolition of any structure 1,000 square feet or greater. Construction activities include, but are not limited to, land clearing; soil and rock excavation, removal, hauling, crushing, or screening; initial landscaping; staging and material storage areas; parking; and access roads. Additionally, Best Available Control Measures must be employed during construction activities at all times. These measures are described in the Construction Activities Dust Control Handbook, which is available online at:

A8-1

A8-2

A8-3

A8-4

http://www.clarkcountynv.gov/airquality/compliance/Pages/Compliance_DustForms.aspx

Section 94 of the AQRs also require that a construction project involving: (i) ten acres or more, (ii) trenching activities one mile or greater in length, or (iii) structure demolition using implosive or explosive blasting techniques, shall include a detailed supplement to the dust mitigation plan that will become part of the dust control permit as an enforceable permit condition.

A8-5

Any construction project having more than 50 acres of actively disturbed soil at any given time is required to have a Dust Control Monitor as described in Section 94.7.5 of the AQRs. In addition, an application for a Dust Control Permit for a project of 50 acres or more shall contain an actual soils analysis of the entire project.

A8-6

Section 91 of the AQRs restricts construction of unpaved roads or alleys in public thoroughfares within HA 216. It also requires owners and/or operators of existing unpaved roads, constructed prior to April 1, 2002, to implement applicable control measures as described in Section 91.2.1.3 of the AQRs: pave, apply dust palliatives or apply and maintain alternative dust control measures approved in writing by the Control Officer and the Region 9 Administrator of the EPA.

A8-7

Section 12 of the AQRs requires issuance of a stationary source permit for any applicable source located in Clark County that has a potential to emit a regulated air pollutant that is equal to or greater than the thresholds listed in that section. However, a definitive determination cannot be made until a complete application is submitted to DAQ and reviewed for applicability.

A8-8

If you have any questions regarding these comments, please contact me at (702) 455-1665, Russell Merle at (702) 455-1662 or Small Business Assistance at (702) 455-1524.

Sincerely,

Brenda Whitfield

Air Quality Specialist
Clark County Department of Air Quality
Planning Division
4701 W. Russell Road Suite 200
Las Vegas, NV 89118

DATE: August 26, 2019

Letter Number A9

TO: Nevada State Clearinghouse, DCNR

FROM: Nevada Division of Environmental Protection, Bureau of Water Pollution Control

SUBJECT: State Clearinghouse Comments for E2020-9 (E2020-9 EIS Gemini Solar Project - Clark County)

Disclaimer: The Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution Control (BWPC) does not have authority for projects occurring on Tribal Lands.

The NDEP, BWPC has received the aforementioned State Clearinghouse item and offers the following comments:

The project may be subject to BWPC permitting. Permits are required for discharges to surface waters and groundwaters of the State (Nevada Administrative Code NAC 445A.228). BWPC permits include, but are not limited to, the following:

- Stormwater Industrial General Permit
- De Minimis Discharge General Permit
- Pesticide General Permit
- Drainage Well General Permit
- Temporary Permit for Discharges to Groundwater's of the State
- Working in Waters Permit
- Wastewater Discharge Permits
- Underground Injection Control Permits
- Onsite Sewage Disposal System Permits
- Holding Tank Permits

Please note that discharge permits must be issued from this Division before construction of any treatment works (Nevada Revised Statute 445A.585).

For more information on BWPC Permitting, please visit our website at:

<http://ndep.nv.gov/bwpc/index.htm>.

Additionally, the applicant is responsible for all other permits that may be required, which may include, but may not be limited to:

- | | |
|-----------------------------------|---|
| • Dam Safety Permits | - Division of Water Resources |
| • Well Permits | - Division of Water Resources |
| • 401 Water Quality Certification | - NDEP |
| • 404 Permits | - U.S. Army Corps of Engineers |
| • Air Permits | - NDEP |
| • Health Permits | - Local Health or State Health Division |
| • Local Permits | - Local Government |

Thank you for the information and the opportunity to comment.

A9-1

A9-2

MOAPA BAND OF PAIUTES

Letter Number A10

MOAPA RIVER INDIAN RESERVATION

BOX 340

MOAPA, NEVADA 89025

TELEPHONE (702) 865-2787

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Via email

October 10, 2019

Shonna Dooman, Field Manager
Bureau of Land Management
Southern Nevada District Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130
Email: sdooman@blm.gov

RE: Moapa Band of Paiutes- Comment on Gemini Project DEIS

Dear Ms. Dooman,

The Moapa Band of Paiutes (Tribe) submits this letter regarding BLM's Draft RMPA/EIS for Arevia's Gemini Solar Project. The Tribe has, on numerous occasions, submitted comment letters to BLM expressing our deep concern that BLM's management of Reservation-adjacent lands and nearby lands with Southern Paiute cultural significance has multiple and enormous impacts on the Tribe.

The Gemini Project is a continuation of this trend, and the Tribe opposes the Project. As an off-Reservation project, the Tribe has little to no control over what happens, yet the Tribe will bear the brunt of impacts caused by the Project. This is a clear environmental justice issue that cannot go unaddressed.

The Gemini Project is slated to occupy and impact at least 7,100 acres of land immediately adjacent to the Tribe's Reservation. In addition, the current right-of-way application covers an area over 6 times as large—44,000 acres total. All these lands are within the Tribe's judicially-established aboriginal lands and within its prior 2-million-acre Reservation, where the Tribe has practiced its subsistence, religious, cultural and other ways of life for centuries. The project area is so massive and so close to the Reservation, its impacts are far-ranging. The project area includes many places that remain important to the Tribe for religious and cultural purposes.

A10-1

A10-2

1. Due Process

By letter dated August 1, 2019, the Tribe requested extra time to respond to the Draft RMPA/EIS, a request that BLM formally ignored. Recently, BLM told us informally that the Tribe that we could have until early October to submit a comment. This is insufficient time to adequately review and comment on the Draft RMPA/EIS. The document is 211 pages, not including appendices, and

A10-3

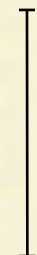
covers many topics. Considering the vast amount of land directly south of the Reservation that would be affected by the Gemini proposal, the Tribe should have received adequate time



A10-3

2. Lands Act

Furthermore, a good portion of the project area has been sought after by the Tribe for many years to partially compensate the Tribe for Congress' decision to reduce its Reservation from 2 million acres. The Gemini project would directly contravene with those ongoing plans. Currently, the Tribe is working with Clark County and other local stakeholders to advance federal legislation that would impact the Gemini Project area. The proposal being considered is for Congress to convey a portion of the lands covered by the Project and right-of-way application from federal ownership to the Tribe's ownership.



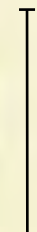
A10-4

The Tribe has dedicated its time and energy to this federal legislation for a long time. During the 113th and 114th Congresses, the Tribe worked with the Nevada delegation to introduce legislation that would require the Secretary of the Interior to take almost 26,000 acres of BLM land adjacent to the Reservation into trust for the Tribe and add those lands to the Moapa Reservation. Although those bills did not come to a floor vote, the Tribe has remained committed to pursuing similar legislation in the 115th Congress with the support of the Nevada delegation, BLM and the local community. The earlier iterations of the bill included areas on which the Gemini project is proposed.



A10-5

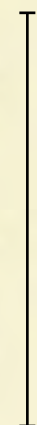
The Tribe looks forward to working with BLM to address concerns raised during the Draft RMPA/EIS process that might impact legislation returning BLM lands to Tribal ownership. The Tribe also requests that BLM engage in government-to-government consultation with the Tribe before issuing an FEIS, Record of Decision or lease allowing the Project to move forward. The consultation would specifically address potential lease language that would protect the Tribe's rights in the event the Project site is transferred to the Tribe by Congress.



A10-6

3. Fugitive Dust Ordinance

In 2017, the Tribe passed a Fugitive Dust Ordinance to control dust emission within the Reservation. This ordinance is on par with Clark County dust control regulations. Any individuals who come onto the Reservation from adjoining BLM public lands and create fugitive dust emissions in violation of the Tribe's ordinance could be subject to civil fines and abatement/remediation costs. The Tribe's ordinance constitutes a tribal plan germane in the development of land use plans for public lands under 43 U.S.C. § 1712(c)(9) and should be considered in BLM's analysis of cumulative impacts and fugitive dust issues. *See also* 40 C.F.R. § 1506.2(d) ("[Environmental impact] statements shall discuss any inconsistency of a proposed action with any approved State or local plan and laws (whether or not federally sanctioned). Where an inconsistency exists, the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law."). The Tribe can provide a copy of its dust control ordinance to BLM upon request.



A10-7

4. Water Rights

We remind BLM that the hydrogeology of the region, as well as the surface and groundwater rights of the Tribe and others, are the subject of extensive and ongoing study by other federal agencies, including the U.S. Fish and Wildlife Service, as well as by the Nevada State Engineer and other entities with regional water interests, including the Tribe. The Nevada State Engineer continues to address ongoing water permit applications and disputes via the Order 1303 process described in the DEIS.

A10-8

In general, we agree with BLM that “[b]ased on modeling, there would be no groundwater drawdown impacts from Project pumping at the Muddy River or the springs feeding the Muddy River that support Moapa dace.” See p. 3-84. However, the Tribe disagrees that the perennial groundwater yield of Basin 218 is limited to 2,200 afy (see p. 3-31). The annual yield of the Basin, and the entire LWRFS, is being actively debated in a hearing before the State Engineer under Order 1303. The Tribe currently possesses permits to appropriate 2,500 afy of groundwater from Basin 218 and intends to utilize its water rights for its own economic development opportunities. BLM’s position that 2,200 afy is the perennial yield potentially damages the Tribe’s ability to use and market its water rights.

A10-9

The Tribe has both important state-based rights as well as a potential claim to unquantified federally-reserved water rights, which would have a date-of-reservation priority date. The United States—including BLM—has a trust responsibility to protect the Tribe’s water rights in the region.

5. Stormwater Runoff

The Project appears to create greater risk of damaging flood events within California Wash where it flows through the Reservation. Although BLM believes that such events are rare, see p. 3-36, in fact such events are not all that rare and are likely to increase in both frequency and intensity due to climate change. BLM writes off these increased impacts to the Reservation without proper analysis. This is a huge environmental justice issue. See Exec. Order 12898 (Feb. 11, 1994) (requiring agencies to “address[], as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.”).

A10-10

6. Noise

The Tribe disagrees with BLM that there are no “sensitive receptors” near the Project site. See pp. 3-119 to -120. The Tribe’s ceremonial and pow wow grounds, located south of the Tribe’s Travel Plaza, are close to the Project site. BLM fails to analyze noise impacts to ceremonial activities occurring on those grounds. Additionally, as noted above, the project is proposed to be on lands that have been and continued to be important to the Tribe in multiple ways.

A10-11

7. Desert Tortoise

BLM predicts staggering impacts to desert tortoise from Project construction under all action alternatives and admits that mitigation may not be sufficient to bring those impacts into an acceptable range. The Tribe has set aside thousands of acres within the Reservation for desert tortoise mitigation of projects within the Reservation, which effectively places those lands off-limits to further development. The Tribe is concerned that severe impacts to desert tortoise populations near the Project site will have indirect impacts to the Tribe if the Reservation's desert tortoise population takes on greater importance for tortoise preservation and recovery. Such impacts could further limit development within the Reservation, which is an environmental justice issue. Thus, the Tribe is opposed to any project that will force the Tribe to bear the burden of tortoise habitat preservation on its Reservation without any concomitant increase in land available to the Tribe to further its own economic development.

A10-12

A10-13

8. Tribal Interests and Environmental Justice

The Tribe continues to wonder at BLM's insistence that "Native American Concerns" are somehow limited to culturally-important plants and animals, and archaeological sites. See Section 3.13. As the Tribe has explained to BLM in other NEPA processes, the Tribe also has interests as a landowner and sovereign sharing a boundary with BLM lands, and has concerns about impacts on Tribal economic development plans and impacts on Tribal government operations and finances.

Impacts to tribal interests are clearly encompassed within the definition of "effects" at 40 C.F.R. § 1508.8, and should be analyzed as cumulative impacts (40 C.F.R. § 1508.7) significantly (40 C.F.R. § 1508.27) affecting tribal economic and social interests as part of the "human environment," 40 C.F.R. § 1508.14. Very little consideration is given to spillover effects from the Project that will directly impact Tribal lands and Tribal interests. In fact, the entire "Native American Concerns" section of the Draft RMPA/EIS is 5 pages. Almost three times as many pages are devoted to discussing concerns related to the Old Spanish Trail.

A10-14

BLM failed to look at unemployment within the Moapa Reservation. The Tribe continually struggles to find ways of securing Tribal member employment on projects located next to the Reservation. These projects would be a great source of employment for Tribal members. The Tribe applies its Tribal Employment Rights Ordinance to all contractors within the Reservation yet application off-Reservation requires the willingness of project developers, prime contractors and unions. BLM states that "[t]he small influx of workers would not displace [the] minority and low-income population [on the Reservation], as worker influx is expected to be into Las Vegas." See p. 3-157. However, this ignores the fact that project developers are under no obligation to hire Tribal members.

A10-15

We disagree with BLM that “[t]he Project would not contribute to a potentially substantial cumulative effect” on the Tribe’s Reservation. BLM has failed to analyze any economic impacts beyond those associated with potentially increased employment opportunities.

A10-16

9. Traffic

For decades, the Tribe’s main revenue has come from its Travel Plaza, which is adjacent to the I-15 Valley of Fire exit ramps. Valley of Fire Road, and project site. Because the Tribe’s Travel Plaza relies exclusively on I-15 travelers for its business, any traffic impacts that make it more difficult to travelers to access the Travel Plaza are extremely problematic for the Tribe. The road should, at a minimum, be widened to accommodate increased construction traffic.

A10-17

10. Conclusion

The Tribe appreciates the opportunity to provide comments on the Draft RMPA/EIS. We remind BLM that, under its own consultation policy, tribal information must be treated as a necessary factor in defining the range of acceptable public-land management options, and BLM must create and maintain a permanent record to show how tribal information was used in the BLM’s decision-making process. Those principles apply to this RMPA/EIS process.

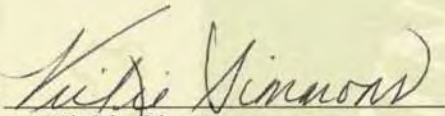
A10-18

The Tribe may have additional concerns and interests that are better addressed during consultation and cooperating agency meetings. We look forward to discussing the Tribe’s interests during future consultation and cooperating agency meetings.

Sincerely,

MOAPA BAND OF PAIUTES

By:



Vickie Simmons

Chair, Moapa Business Council

cc: Tim Smith, BLM District Manager (via email)
Kimberly Mangum, BLM Tribal Liaison (via email)
Ziontz Chestnut, Tribal Attorneys (via email)

Non-Governmental Organizations and Private Companies



Letter Number B1

California Program Office

1303 J Street, Suite 270 | Sacramento, California 95814 | tel 916.313.5800
www.defenders.org

September 5, 2019

Herman Pinales, Project Manager
Bureau of Land Management,
Southern Nevada District Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130
Sent via Email: blm_nv_geminisolar@blm.gov

Dear Mr. Pinales;

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement (DEIS) for the Gemini solar project. This comment letter is submitted by Defenders of Wildlife (Defenders) on behalf of its 1.8 million members and supporters in the U.S. including 279,000 in California and 16,246 in Nevada.

Background: The proposed solar project located approximately 33 miles northeast of Las Vegas and east of I-15, with a footprint of approximately 7,100 acres. It would generate up to 690 MW using photovoltaic technology. Alternatives analyzed in the DEIS include the No Action, the Proposed Action, and two additional alternatives—the All Mowing Alternative and the Hybrid Alternative. The proposed project is located within high quality desert tortoise habitat and within a priority habitat linkage identified by the U.S. Fish and Wildlife Service. Direct impacts to the desert tortoise include the take of as many as 215 adults and 900 or more hatchlings and juveniles.

Our comments on the DEIS for the Gemini solar project are as follows:

1. Requirements of the Las Vegas Resource Management Plan (LVRMP): The LVRMP was approved in October 1998 and is the current plan governing management of public lands under jurisdiction of the BLM's Las Vegas Field Office. Page two of the Record of Decision (ROD) for the LVRMP states, "*The RMP provides objectives and directives as a framework for management of public lands for the foreseeable future, with implementation of the goals and objectives of the Desert Tortoise Recovery Plan (USFWS 1994) the highest priority.*"

Page seven of the ROD for the LVRMP includes a statement regarding the Rationale for the Decisions: ***“The emphasis of the Las Vegas RMP is protecting unique habitats for threatened, endangered and special status species, while providing areas for community growth, recreation, mineral exploration and development, as well as many other resource uses. The BLM is committed to provide the desert tortoise with the highest possible quality of habitat with limitations on the interference by man.”***

LVRMP Management Objective AC-1: ***“Maintain functional corridors of habitat between areas of critical environmental concern to increase the chance of long-term persistence of desert tortoise populations within the recovery unit.”***

LVRMP Management Objective SS-3: ***“Manage desert tortoise habitat to achieve the recovery criteria defined in the Tortoise Recovery Plan (USFS 1994) and ultimately to achieve delisting of the desert tortoise. When the population in a recovery unit meets the following criteria it may be considered recovered and eligible for delisting (for complete criteria see the Tortoise Recovery Plan.”***

- Criterion 2: ***“Enough habitat must be protected within a recovery unit, or the habitat and desert tortoise populations must be managed intensively enough, to ensure long-term population viability.”***

“Although the Tortoise Recovery Plan recommends establishment of at least one desert wildlife management area of 1,000 square miles in each recovery unit, it is not possible to achieve this on public lands in Nevada. The minimally acceptable situation identified in the Tortoise Recovery Plan is to establish smaller desert wildlife management areas that are connected by corridors of functional tortoise habitat. This is the situation in both the Northeastern and Eastern Mojave Recovery Units.”

Comment: The Gemini solar project application is considered by BLM to be “grandfathered” and not subject to the provisions of the Programmatic Solar Energy Development Plan for Six Southwestern States because the earlier date of the application. It is, however, subject to the provisions of the LVRMP. Renewable energy development was not addressed in the LVRMP, so the overarching guidance relative to any land use, including considering granting rights of way for renewable energy development, is protection of the desert tortoise and its habitat with the goal of recovering the species.

B1-1

BLM stated that the highest priority in the LVRMP is the implementation of the goals and objectives of the 1994 Desert Tortoise Recovery Plan, and that functional corridors or habitat linkages connecting Areas of Critical Environmental Concern would be maintained. The proposed project is located in a priority habitat linkage for the desert tortoise with very high quality habitat and desert tortoise densities that are among the highest in the Northeastern Recovery Unit, as well as all other recovery units throughout the range of the species. The U.S. Fish and Wildlife Service recommended to BLM that renewable energy projects should not be

B1-2

located within priority habitat linkages, which it identified on maps submitted to BLM in its comments on the Programmatic Solar Development Plan for Six Southwestern States.

B1-2

Based on a GIS analysis of habitat suitability within the proposed project area, Defenders has calculated that the individual units comprising the proposed project have an average suitability rating of 0.67 on a scale of 0 to 1.0. For comparison, we also calculated that the Coyote Springs ACEC has an average habitat suitability rating of 0.66 and the Piute-Eldorado ACEC averages 0.51. Thus, the proposed Gemini solar project is located on habitat having a higher suitability rating than these two ACECs which were designated for conservation of the desert tortoise and its habitat in the 1998 LVRMP. A copy of our habitat suitability map of the project area is attached.

B1-3

Given the above, in addition to Section 7 provisions of the federal Endangered Species Act, FLPMA and BLM's policy for management of special status species (Manual 6840), the only alternative that aligns with these land use and management directives is the No Action Alternative under which BLM would not authorize the project, not amend the LVRMP and would continue to manage public lands in the area in a manner consistent with the LVRMP.

2. Alternatives analyzed: The DEIS states that *"Alternatives to the Proposed Action were developed by the BLM to avoid or reduce various resource conflicts. Key resource constraints include the Mojave desert tortoise, waters of the United States, three-corner milkvetch, a Section 368 Energy COC, and the OSNHT corridor."* And that, *"Each alternative is approximately 7,100 acres (2,873 hectares). The primary, although not the only, difference between the Proposed Action and the two alternatives is in how the Project would be constructed and operated. An alternative method of site development, known as mowing, is included in each alternative. Vegetation would be mowed in the solar development areas instead of completely removed through disking and compacting the soils on the site (a process known as "disk and roll" or "traditional development methods")."*

Comment: The alternatives to the proposed project that would lessen impact to vegetation in varying amounts using mowing as opposed to complete removal would, in theory, allow desert tortoises to be returned to the site and freely move across the landscape. These alternatives have not been proven compatible with maintaining a viable desert tortoise population due to reduced canopy coverage, repeated use of motorized mowing equipment and vehicles throughout the proposed solar project area. As such, they are not appropriate for such a large scale, intensive land use as a PV solar energy generation project.

B1-4

We recommend that BLM develop additional alternatives that include reducing the footprint of the proposed project to actually avoid or minimize impacts to sensitive biological resources, and especially the threatened desert tortoise. The project proposed by the applicant and in each of BLM's alternatives in the DEIS are essentially the same, which does not reflect a reasonable range as required by the National Environmental Policy Act (NEPA). This indicates that BLM has designed alternatives that meet the desire of the project applicant.

B1-5

B1-6

To further illustrate the issue that the DEIS lacks a true range of alternatives, we call attention to a recent federal court ruling regarding BLM's alternatives for vehicle route designation in the West Mojave Plan of 2006. Federal District Judge Illston for the Northern District of California found:¹

"With regard to NEPA, the Court concludes that the FEIS is flawed because it does not contain a reasonable range of alternatives to the proposed action, and its discussion of the "no action" alternative is incomplete."

"All of the alternatives in the FEIS considered the same OHV route network, with variations on the extent to which the routes would be designated "open" versus "limited": no alternative proposed closing additional routes to OHV use. Indeed, in assessing Alternative A, the FEIS states that "All alternatives share the same proposed route designation and implementation characteristics."

*"Defendants (BLM) emphasize other differences between the alternatives, such as the fact that dirt bikes and ATVs were banned from Alternative D, or that speed limits were set for designated routes in DWMA's under Alternative C. However, under both Alternatives C and D, all 5,098 miles of routes were designated for some level of OHV use. Thus, despite the differences in levels and intensity of use ... all of the alternatives in the FEIS are based on the same 5,098 mile OHV route network. The BLM also stresses the fact that Alternative B narrows the stopping-camping-parking corridors from 600 feet (300 feet on each side from the centerline of routes) to 100 feet (50 feet from the centerline) within tortoise DWMA's, thus reducing the acreage accessible by OHVs. While this is a significant impact, the **fact remains that all of the alternatives, including Alternative B, are based on the same OHV route network, and thus do not provide a truly meaningful range of alternatives.**" (bold emphasis added).*

Comment: The range of alternatives in the DEIS for the Gemini solar project suffer from the same legal flaw in the BLM's West Mojave route designation FEIS – they are all based on a 7,100 acre project that differs only in intensity of impact to soil and plant communities by using vegetation mowing rather than complete removal of vegetation through blading and plowing.

Section 1500.2 (Policy) of the CEQ Regulations states that *"Federal agencies shall to the fullest extent possible: ...Use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment."*

3. Purpose and Need for the project: With regard to the purpose and need for the project, BLM states, *"Taking into account the BLM's multiple-use mandate, the BLM's purpose and need for this action is to respond to the ROW application submitted by the Applicant under Title V of FLPMA (43 United States Code [USC] § 1761) (serial number N-84631) to construct, operate,*

¹ Case3:06-cv-04884-SI Document169 Filed09/28/09 Page1 of 92

maintain, and decommission the Project.” And, the applicant’s purpose and need (objective) for the project is “...to contribute approximately 690-megawatts (MW) to meet the demand in Nevada and/or California.”

Comment: BLM appears to have taken an overly narrow approach in justifying the purpose and need for the project. First, it emphasizes its multiple-use mandate, but fails to include that the Federal Land Policy and Management Act (FLPMA) also requires that public lands be managed *“...on the basis of multiple use and sustained yield”* and in a manner that *“...will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.”*

B1-8

It is critically important that BLM recognize and adhere to its full legal obligations under FLPMA in justifying the purpose and need for the project, and in identifying and analyzing alternatives to the proposed project. The presence and abundance of the threatened desert tortoise within the footprint of the project, and its location within a priority habitat linkage identified by the U.S. Fish and Wildlife Service², heightens the need for BLM to completely and accurately describe its responsibility for public land management under FLPMA, and its responsibility under Section 7(a)(1) of the federal Endangered Species Act to *“...utilize (its) authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act.”*

B1-9

Comment: The significance of the desert tortoise population within the project area needs to be better defined relative to its abundance and how the project would impact recovery of the species given that the DEIS states, *“The average density of adult desert tortoises in the Proposed Action area is 18.6 per square mile (7.2 per square kilometer), for the All Mowing Alternative is 22.8 per square mile (8.8 per square kilometer), and for the Hybrid Alternative is 19.9 per square mile (7.7 per square kilometer).”* And, *“The Project site generally supports high-quality habitat for the species, and, of the studies completed, this region has the highest known densities of desert tortoise in the Northeastern Mojave Recovery Unit. The average density in the desert tortoise critical habitat units (CHUs) within the Northeastern Mojave Recovery Unit was 10.9 adult tortoises per square mile (4.4 per square kilometer) in 2014 (USFWS 2014). The estimated number of tortoises in the Northeastern Mojave Recovery Unit has increased from 2004 to 2014 (4,920 adult-sized desert tortoises to 18,220, for a 270 percent increase). The Northeastern Mojave Recovery Unit is the only recovery unit with a currently increasing population of desert tortoises (USFWS 2015b). The USFWS attributes the increase to the increased survival of adults and sub-adults moving into adult size classes (USFWS 2015a).”*

B1-10

² http://solareis.anl.gov/documents/fpeis/maps/FWS_Desert_Tortoise_Connectivity.pdf
http://solareis.anl.gov/documents/fpeis/maps/FWS_Connectivity_Explanation.pdf

Comment: BLM should identify and analyze alternatives to the proposed project based on desert tortoise occurrence and density within the areas identified in Table 3.8-1 Desert Tortoise Survey Areas and Results and Population Density Estimates. Obvious alternatives that need to be analyzed include utilizing Alternative Development Area F (1,832 acres with no desert tortoises), and Proposed Development Area D (1,913 acres with 20 desert tortoises). Considering that a properly designed PV solar facility generates approximately 1 MW/7 acres³, a project limited to Development Area F would generate a total of approximately 262 MW, and a project located within Development Area D would generate a total of approximately 273 MW. Combined, limiting the solar project to these two areas would generate approximately 535 MW, an amount that is approximately 78% of the applicant's goals. However, we caution BLM to avoid consideration and analysis of alternatives that align only with the applicant's goal of developing and operating a project that would generate approximately 690 MW, as it has done in the DEIS.

B1-11

B1-12

Impacts of the proposed project on desert tortoises are substantial. According to the DEIS, *"Direct effects include the take of up to the estimated 215 adult tortoise (and the estimated 900 or more juveniles) expected to be found on the Project site during construction; death or injury to tortoises within the construction areas of the gen-tie line routes; and permanent loss of desert tortoise habitat."* And, *"Construction would result in the removal of all vegetation and habitat over approximately 7,097 acres (2,872 hectares) that otherwise supports desert tortoise and would include fencing that would exclude tortoise movement. The take of all adult and juvenile tortoises on the Project site, in addition to the loss of habitat, would also result in a substantial adverse impact on the species and the local population. MM WILD-1 requires that the footprint of the solar facility be reduced to the minimum size needed; however, substantial loss of habitat and a substantial take of tortoises would still occur."*

B1-13

Comment: There is no justification for this project that outweighs the importance of the desert tortoise, its habitat and BLM's obligations to use its full authority to take actions that will contribute to the recovery of this threatened species. It is clear the habitat and desert tortoise population is important for recovery of the species, and reinforced by the U.S. Fish and Wildlife Service its comments to BLM on the Programmatic Solar Energy Development Plan for Six Southwestern States:

B1-14

"The Service continues to recommend that Mojave desert tortoise habitat linkages connecting Tortoise Conservation Areas (as identified in the 2011 revised recovery plan for the species) be excluded from utility-scale solar energy development under the Solar PEIS. We are concerned that solar energy development within these linkages may compromise recovery of the Mojave desert tortoise by isolating populations within tortoise conservation areas and within the

³ As per the Desert Renewable Energy Conservation Plan Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan. (<https://www.drecp.org/finaldrecp/>)

linkages themselves. The Service has worked to further refine the areas we are recommending for exclusion to focus on those that are most crucial to maintaining genetic flow between existing conservation areas."

4. No opportunity to translocate desert tortoises: The DEIS indicates there are no opportunities to translocate desert tortoises from the project site to habitat within the Northeastern Mojave Recovery Unit because there are no populations in the latter area, including those occupying habitat adjacent to the project site, that are depleted according to the U.S. Fish and Wildlife Service Desert Tortoise Recovery Office. This determination means that those habitats have desert tortoise populations at or above their current ecological capacity to support the species.

Comment: The lack of available desert translocation sites further supports the No Project Alternative. Furthermore, the alternatives that include mowing vegetation to varying degrees and returning desert tortoises to the project area during its operational life is an untested proposal that has not been tested through research, which is inappropriate over such a large project area and involving a threatened species protected under the federal Endangered Species Act.

5. Conclusion: Based on the above comments, Defenders of Wildlife considers the No Action Alternative the one most aligned with the provisions and the ROD of the 1998 LVRMP, the FLPMA, BLM Policy Manual 6840, and Section 7(a)(1) of the Endangered Species Act.

In its current form, the DEIS is deficient in that it lacks a range of reasonable alternative to the proposed action, and is highly speculative regarding likelihood that the solar project area could support desert tortoises during the 30 year life of the project requiring motorized vehicle use associated with repeated vegetation mowing, photovoltaic panel washing and general maintenance activities. We do not consider the DEIS legally sufficient, and deficiencies identified in our comments should be corrected and included in the FEIS for the proposed project. This may require BLM to prepare a supplemental DEIS for public review and comment before proceeding to a FEIS.

Sincerely,

Jeff Aardahl
Defenders of Wildlife
980 9th Street, Suite 1730
Sacramento, CA 95814
jaardahl@defenders.org

Attachment: Habitat suitability map of the proposed Gemini solar project area.

National Headquarters | 1130 17th Street, N.W. | Washington, D.C. 20036-4604 | tel 202.682.9400 | fax 202.682.1331
| www.defenders.org

B1-15

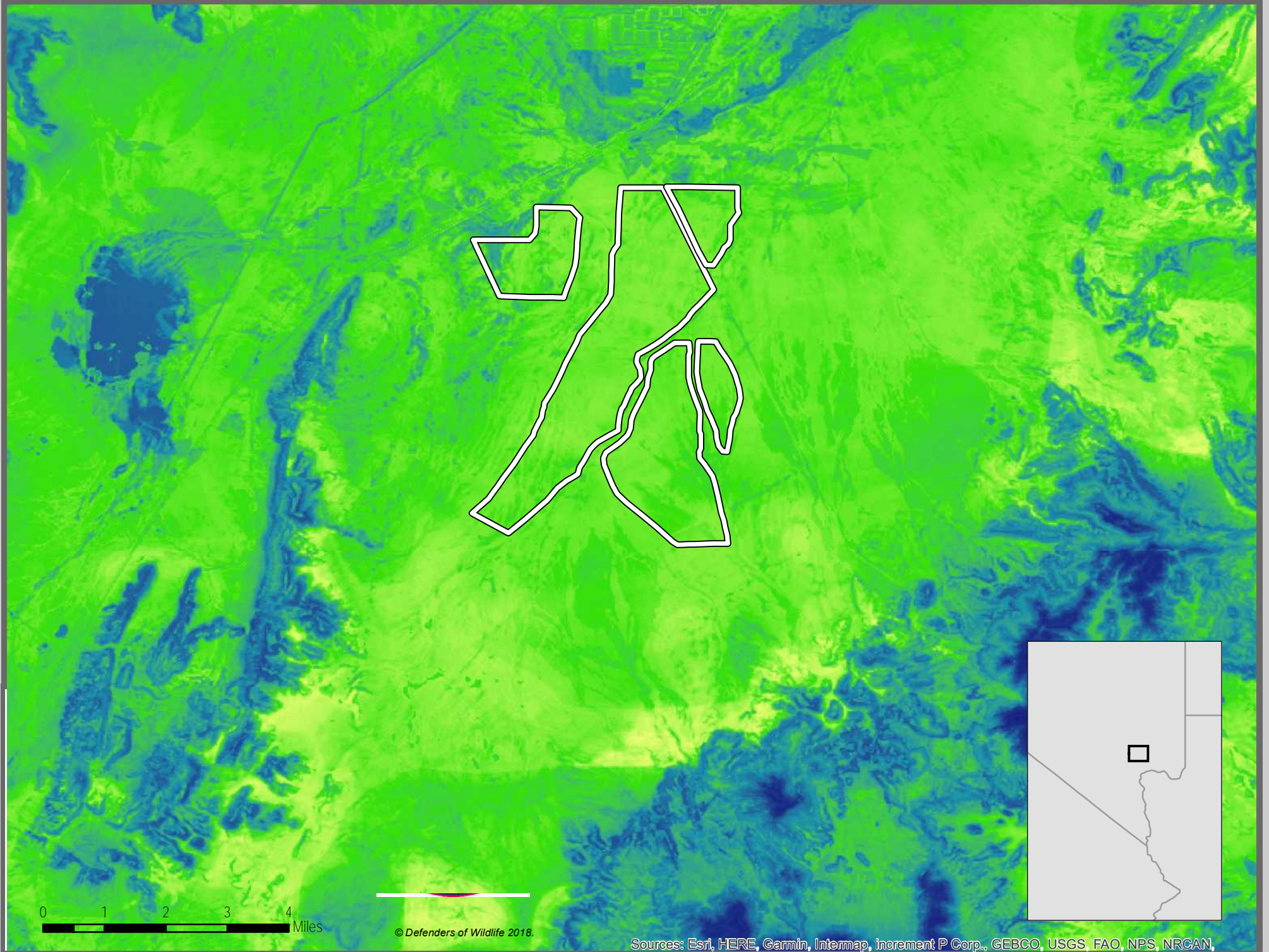
B1-16

B1-17

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B1-19

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Fwd: [EXTERNAL] Gemini Solar Project Comments James M. Andre

1 message

----- Forwarded message -----

From: <granites@telis.net>

Date: Thu, Aug 29, 2019 at 6:22 PM

Subject: [EXTERNAL] Gemini Solar Project Comments James M. Andre

To: <blm_nv_sndr_geminisolar@blm.gov>

To Whom it May Concern:

Please select a No Action Alternative for the Gemini Solar Project and designate the region a large-scale solar energy-free zone with a Plan Amendment to the 1998 Las Vegas Resource Management Plan.

B2-1

Approval of the project would result in the removal of over 7,100 acres or 11 square miles of good quality desert tortoise habitat. The desert tortoise is Federally Threatened and is losing habitat throughout its range. It may need to be up-listed to Endangered status with the cumulative developments happening on its habitat.

B2-2

Vegetation mowing as proposed for this project is a purely experimental action, as there have been no peer reviewed studies that show long-term success. However, clearly with vegetation mowing burrowing animals would be killed and deafened. Many of the estimated 900 juvenile desert tortoises would be missed and killed. Biological soil crusts would be destroyed. Invasive plants will likely colonized the mowed areas.

B2-3

B2-4

B2-5

B2-6

Tortoises would be allowed to re-enter the site. Tortoises could be killed by operation and maintenance activities because vehicles will enter the habitat for maintenance. Shade from solar panels could inhibit tortoises coming out of hibernation in late winter and spring.

B2-7

B2-8

The project would remove 700 acres of the habitat for Threecorner milkvetch, one of Nevada's rarest plants, and will impact more than a dozen other rare plant species.

B2-9

The project site lies on one of the most undisturbed habitats in the Clark County. It contains biological soil crusts and thousands of native Mojave Desert vertebrates and invertebrate species. It is home to sensitive species like the burrowing owl, kit fox, several rare milkvetches, the American badger and the Gila monster.

B2-10

Rare microphyll woodland with catclaw acacia and desert willow will be destroyed. These groves of deep-rooted desert trees harbor numerous bird species, and should be conserved, not shredded.

B2-11

The project would be built on part of the historic Old Spanish Trail. The massive build-out of solar panels, new roads and transmission lines will permanently destroy the historic and wild character of the area.

B2-12

This project represents a needless destruction of our natural heritage. Several thousand acres of land are being developed in the Las Vegas Valley for new housing. Solar energy development should be developed on rooftops and over parking lots, eliminating the need for costly transmission lines.

B2-13

B2-14

For the justification provided above, I support the No Action Alternative for the Gemini Solar Project.

James M. André

Director, Granite Mountains Desert Research Center Univ. of California Natural Reserve System

UC Riverside EEOB (Evol./Ecol./Org. Biol.)

jim.andre@ucr.edu

office/lab: 760-733-4222

mail: PO Box 101. Kelso, CA 92309



*working through science, law and creative media to secure a future for all species,
great or small, hovering on the brink of extinction.*

VIA ELECTRONIC MAIL

September 5, 2019

Herman Pinales
Attn: Energy & Infrastructure Project Manager
BLM Las Vegas Field Office,
4701 N. Torrey Pines Drive,
Las Vegas, NV 89130
Email: blm_nv_sndg_geminisolar@blm.gov

**Re: BLM DEIS and Draft Resource Management Plan Amendment for the
Proposed Gemini Solar Project in Clark County, Nevada**

Dear Mr. Pinales,

These comments are timely submitted on behalf of the Center for Biological Diversity (“Center”) regarding the Bureau of Land Management’s Draft Environmental Impact Statement (DEIS) and Draft Resource Management Plan Amendment for the Proposed Gemini Solar Project in Clark County, Nevada. *See* Notice of Availability of the Draft Resource Management Plan Amendment and Draft Environmental Impact Statement for the Gemini Solar Project in Clark County, NV 84 Fed. Reg. 26701-702 (June 7, 2019).

The Center is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 1.6 million members and supporters throughout the United States including many members who reside in Nevada. The Center’s Nevada program focuses on the protection of wildlife and endangered species, the preservation of public lands, and the sustainability of Nevada’s groundwater resources.

The development of renewable energy is a critical component of efforts to reduce greenhouse gas emissions, avoid the worst consequences of global warming, and to assist Nevada and the nation in meeting emission reduction goals. The Center strongly supports the development of renewable energy production, and the generation of electricity from solar power, in particular. However, like any project, proposed solar power projects should be thoughtfully planned to minimize impacts to the environment. In particular, renewable energy projects should avoid impacts to sensitive species and habitats, and should be sited in proximity to the areas of electricity end-use in order to reduce the need for extensive new transmission corridors and the efficiency loss associated with extended energy transmission. Only by maintaining the highest

B3-1

B3-2

environmental standards with regard to local impacts, and effects on species and habitat, can renewable energy production be truly sustainable.

The Center provided scoping comments regarding this proposal on August 26, 2018, and those comments are incorporated herein by reference. Unfortunately, the DEIS fails to address several critical issues raised by the Center and other commenters and fails to consider a reasonable range of alternatives that could avoid impacts to resources.

B3-3

The Center shares the concerns raised in comments submitted on this DEIS by Sierra Club and Desert Tortoise Council among others. Of particular concern is the DEIS' failure to accurately identify impacts to desert tortoise habitat and populations, to analyze those impacts, and to consider alternatives that would avoid those impacts including a reduced footprint alternative.

B3-4

Among the many shortcomings that render the DEIS inadequate are the following:

- Failure to accurately identify and analyze impacts to desert tortoise habitat, individuals, and populations;
- Failure to adequately identify and analyze impacts to habitat connectivity and linkages critical to landscape conservation values and adaptation;
- Failure to adequately identify and analyze impacts to rare plants and rare plant communities including desert dry wash woodlands; and
- Failure to consider a reasonable range of alternatives that would avoid significant impacts including a reduced footprint alternative that would avoid the highest density occupied desert tortoise habitat areas, rare plants, and ephemeral streams and washes and associated plant communities.¹

B3-5

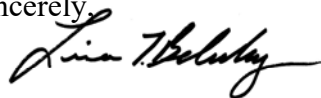
B3-6

B3-7

B3-8

The Center hopes and expects that BLM will cure the deficiencies in this DEIS and provide additional environmental review that addresses these and other resource concerns and includes a meaningful range of alternatives that would avoid impacts .

Sincerely,



Lisa T. Belenky, Senior Attorney
Center for Biological Diversity
1212 Broadway, Suite 800
Oakland, CA 94612
(510) 844-7107
lbelenky@biologicaldiversity.org

¹ While the Center supports development of new mitigation measures, the proposed mowing along with permeable fencing to allow desert tortoise to access the solar fields is experimental at this scale and cannot be relied on alone to provide robust avoidance, minimization or mitigation for impacts to desert tortoise on this site or for connectivity.

Old Spanish Trail Association
Gemini Solar Project – BLM Public Hearing
July 23, 2019



The Old Spanish Trail Association (OSTA) is a 501 (c) 3 organization whose mission is to study, preserve and protect, interpret and educate, and promote respectful use of the Old Spanish Trail (OST), the Old Spanish National Historic Trail (OSNHT), and closely related historic routes.

The National Trails System Act (1968) established a national trails system to promote preservation of, public access to, travel within, and enjoyment of the open-air, outdoor areas, and historic resources of the nation. OSTA appreciates the Las Vegas BLM Field Office's role in directing the public Environmental Impact Statement process and for engaging OSTA as a consulting party; Section 11 of the National Trails System Act authorizes federal agencies to engage volunteer organizations to plan, develop, maintain, and manage National Historic Trails.

OSTA further notifies Las Vegas BLM Field Office that continued consultation with our organization should include the OSTA Executive Director and the OSTA Stewardship Committee chair, as well as the local Nevada Chapter, with regard to establishing mitigation and treatment measures under the various alternatives.

Given the significant impact this project would have on the OSNHT, OSTA also requests an opportunity to serve as a “concurring party” related to development of a Programmatic Agreement for compliance provisions of the National Trails System Act.

B4-1

OSTA notes significant adverse effect from the Gemini Solar Project on the historic setting of the Old Spanish National Historic Trail, particularly to the California Crossing “High Potential Segment” identified in the OSNHT Comprehensive Administrative Strategy. Components of the proposed project would physically and visually detract from the vicarious experience associated within the OSNHT trail corridor by substantially altering the underlying landscape and overall setting of the valley.

B4-2

OSTA is concerned with the proposed rerouting of the Old Spanish Trail Road as identified in the draft EIS under MM REC-1. It provides insufficient mitigation for impacts to the OSNHT and will negatively affect the recreational trail experience. Strategies to mitigate impacts under the National Historic Preservation Act do not mitigate stated objectives of Section 12 of the National Trail System Act that affords visitors and trail users “an opportunity to vicariously share the experience of the original users of the historic route.”

B4-3

We believe additional mitigation strategies should be considered for preserving the California Crossing High Potential Segment including preparation and implementation of a Recreation and Trail Development Strategy for the entire segment of the OSNHT called the "Jornada del Muerte" from California Crossing to Las Vegas Springs [High Potential Historic Site]. This effort would maximize the visitor experience and protect the continuous nature of the historic route.

B4-4

In addition to offset mitigation impacts being considered, OSTA supports establishing a permanent trust fund for the life of this project, including decommissioning measures to restore the environment.

B4-5

OSTA will be submitting formal written comments before the September 5th draft EIS deadline.



Letter Number B5

Lynn Brittner
Executive Director
Old Spanish Trail Association
4825 Guadalupe Trail
Albuquerque, New Mexico 87107
ostamgr@gmail.com

September 5, 2019

Gemini Solar Project
Attn: Herman Pinales
BLM Las Vegas Field Office
4701 N Torrey Pines Drive
Las Vegas, NV 89130
blm_nv_sndg_geminisolar@blm.gov

Subject: OSTA Comments on Draft EIS for Gemini Solar Project:

The Old Spanish Trail Association (OSTA) is a 501 (c) 3 organization whose mission is to study, preserve and protect, interpret and educate, and promote respectful use of the Old Spanish Trail (OST), the Old Spanish National Historic Trail (OSNHT) and closely related historic routes. OSTA is the designated volunteer organization for the OSNHT, recognized by both the National Park Service and BLM, under Section 11 of The National Trails System Act (NTSA) of 1968, as amended [16 USC 1250] (2).

OSTA recognizes the Las Vegas BLM Field Office's role as lead federal agency for preparation of the Environmental Impact Statement for the proposed Gemini solar project and making a decision on whether approval of the project would be in the public interest. BLM is also responsible for assuring this decision is consistent with all relevant federal law and regulation including considering OSTA a consulting party under Section 11 [16 USC 1250] of the NTSA. The Nevada chapter of OSTA has previously submitted comments written from a local perspective. This letter provides broader, comments from OSTA's national organizational perspective to be considered separately from the Chapter comments.

I. Purpose and Need

The Draft EIS states [ES-1]:

In accordance with FLPMA, public lands are to be managed for multiple uses that consider the long-term needs of future generations for renewable and non-renewable resources. The BLM is authorized to grant rights-of-way (ROWs) on public lands for systems of generation, transmission, and distribution of electrical energy (§ 501[a][4]). Taking into account the BLM's multiple-use mandate, the BLM's purpose and need for this action is to respond to the ROW application submitted by the Applicant under Title V of FLPMA (43 United States Code [USC] § 1761) (serial number N-84631) to construct, operate, maintain, and decommission the Project. The BLM will decide whether to deny the proposed ROW, grant the ROW, or grant the ROW with modifications, and approve the RMPA. The BLM may include any terms, conditions, and stipulations it determines to be in the public interest and may include modifying the proposed use or changing the location of the proposed facilities (43 Code of Federal Regulations [CFR] 2805.10(a)(1)). Several other agencies have been identified as cooperating and participating agencies. The purpose and need for each of these agencies is to respond to authorization requests for permits and approvals to construct and operate the Project.

OSTA believes that this statement does not put proper emphasis on the existing land use allocation of the application area of project direct and in-direct for solar generation entirely within the “federal protection corridor” of the Old Spanish National Historic Trail. The core issue is that BLM should have denied the application up front because there is a pre-existing land use allocation for the purposes of management of the federal protection corridor for the designated Old Spanish National Historical Trail under the National Trails System Act. The BLM should have advised the applicant that there was an existing Congressionally enacted “special designation” that conflicts with the proponent’s plan.

B5-1

II. Description of the proposed action

The \$1 billion-dollar Gemini Solar Project is expected to become the nation’s large solar facility. It would be located entirely within the OSNHT trail corridor. The Project and its associated features would directly and indirectly impact the OSNHT and its “California Crossing High Potential Segment,” as identified in BLM’s Comprehensive Administrative Strategy for the OSNHT. ⁽³⁾

B5-2

- OSTA believes the project, as proposed, would substantially interfere with the nature and purpose of the OSNHT under the National Trail System Act. The viewshed analysis performed by Panorama Environmental, Inc. at Inventory Observation Points (IOP) identified over ten miles of the OSNHT on BLM-managed land with impacted views of the Project. All locations within the fence line of the Project are effectively within the OSNHT “federal trail protection corridor.”

B5-3

III. Consideration of Reasonable Alternatives

- The draft EIS failed to propose alternatives for either relocating or eliminating project tracts having adverse impacts to the California Crossing High Potential Segment and OSNHT corridor.

B5-4

Furthermore, nowhere in the document is there any consideration of why the project footprint must be in the “federal protection corridor” and no alternative was provided to indicate that another footprint was considered that would not conflict with the existing special designation.

B5-5

BLM is obligated to provide reasonable alternatives to the proposal that would avoid irreversible and irretrievable impacts to the OSNHT, and should prepare such an alternative prior to making any approval, approval with modification, or denial of the application.

B5-6

IV. Failure to follow BLMs own policy for management of designations under the National Trails System Act in Handbook 6280.

OSTA believes, according to this Handbook that the BLM has a responsibility to amend its own existing Resource Management Plan to incorporate protection for the OSNHT corridor; **this has not been done.** Furthermore, the NTSA requires that “efforts shall be made to avoid activities incompatible with the purposes for which such trails were established.”

B5-7

BLM has fundamentally failed in the Gemini Project Draft EIS to comply with BLM’s own governing regulations and the intent of the National Trails System Act of 1968.

V. Mitigation

OSTA requests an opportunity to serve as a “consulting party” in a Programmatic Agreement / Memorandum Agreement for compliance provisions of the National Trails System Act ⁽⁴⁾ as part of the decision record for this federal action.

B5-8

The California Crossing High Potential Segment of the OSNHT contains feature of topography, vegetation, surrounding geology, and hydrology that would likely be recognizable to emigrants who traveled through this region during the historic period. This stretch of the Old Spanish Trail was famously known as the Jornada del Muerte (day’s journey of death) due to the lack of water through this area. Components of the proposed project would physically and visually destroy the vicarious experience associated with the OSNHT trail corridor by substantially altering the underlying landscape and overall setting of the valley.

B5-9

The National Trail System Act requires specific treatment for adverse impact and mitigation. In light of the significant adverse impacts (both physical and visual) the Gemini Solar Project would have upon the corridor of the Old Spanish National Historic Trail, OSTA believes that BLM should mandate that the project applicant undertake substantive mitigation measures to offset those impacts.

B5-10

If the Gemini Solar Project is approved the National OSTA organization recommends direct mitigation to:

- Establish an educational kiosk facility with parking area alongside I-15 to improve education and public awareness of the California Crossing High Potential Segment. This open, but roofed, display would utilize a mix of interpretive products and include suitable technology to provide a multimedia narrative of the trail history and its significance for development of the southwest U.S.
- Provide corporate sponsorship for the annual OSTA Conference for the duration of the project.
- Fund development and implementation of a comprehensive OSNHT Recreation and Development Plan to address recreational access and provide opportunities for the public to experience the historic trail setting to gain an “open-air” perspective of how the local landscape influenced commercial trade. This management plan would also provide appropriate interpretation and signage for the OSNHT to improve the visitor experience and appreciation for national historic trails. ⁽⁵⁾

B5-11

Furthermore, OSTA recommends establishment of a trust fund to promote the preservation and appreciation of the OSNHT for enjoyment of the American people. This fund would help mitigate cumulative impacts to the trail and “establish long term conducting trail-related research projects, or providing education and training to volunteers on methods of trails planning, construction, and maintenance” directly tied to volunteer organizations per provisions of the National Trail Systems Act.

B5-11

In regards to decommission of the project, OSTA seeks status as a consultant to the process of restoring the landscape.

B5-12

In summary, OSTA supports the EIS public process, but asserts that the Nevada BLM must first fully execute its responsibilities under its own Resource Management Plan and its NTSA-mandated responsibility for managing and administering congressionally designated trails, before the Gemini Project EIS receives Final status.

B5-13

OSTA is proud to be trail partner to work with the BLM Nevada Office moving forward and per our existing Cooperative Agreement with the Department of Interior to assist “in gathering trail-related data, including site, segment, and trail identification and documentation; historical information; landowner information; status of resource protection; and public and private land use and interest in the Trail. And specifically, to assist in the identification and documentation of “high potential” sites and segments that can be added to a Geographic Information System database maintained by the Administration.”

Please accept our public comment for your consideration.



Lynn Brittner
Executive Director
Old Spanish Trail Association

NOTES

⁽¹⁾ The board of our national organization is comprised of executive officers, state directors (NM, CO, UT, AZ, NV and CA) and at large directors. Established in 1994, the organization has over 400 paid members and twelve local or regional chapters.

⁽²⁾ *The National Trails System Act* established a network of visual, historic, and recreational trails to provide for outdoor recreation needs; promote the enjoyment, appreciation, and preservation of open-air, outdoor areas, and historic resources; and encourage public access and citizen involvement. Its Section 11 authorizes federal agencies to engage volunteer organizations to plan, develop, maintain, and manage National Historic Trails. Section 11 also states that *the Secretary of the Interior, the Secretary of Agriculture, and the head of any Federal agency administering Federal lands, are authorized to encourage volunteers and volunteer organizations to plan, develop, maintain, and manage, where appropriate, trails throughout the Nation.*

NTSA - SEC. 11(a) [16USC1250]

(3) The term "high potential route segments" means those segments of a trail which would afford high quality recreation experience in a portion of the route having greater than average scenic values or affording an opportunity to vicariously share the experience of the original users of a historic route.
NTSA SEC. 12 (2) [16USC1251]

(4) "The Congress recognizes the valuable contributions that volunteers and private, nonprofit trail groups have made to the development and maintenance of the Nation's trails. In recognition of these contributions, it is further the purpose of this Act to encourage and assist volunteer citizen involvement in the planning, development, maintenance, and management, where appropriate, of trails."
NTSA SEC. 2(c) [16 USC 1241]

(5) These measures and monies would be in addition to those for the local Nevada Chapter project proposals,



Letter Number B6

Herman Pinales
Attn: Energy & Infrastructure Project Manager
BLM Las Vegas Field Office,
4701 N. Torrey Pines Drive,
Las Vegas, NV 89130

September 5, 2019

Dear Mr. Pinales;

The National Parks Conservation Association (NPCA) thanks you for the opportunity to comment on the Resource Management Plan Amendment and Draft Environmental Impact Statement (RMPA/EIS) for the Gemini Solar Project in Clark County, Nevada.

NPCA is the only independent, nonpartisan membership organization devoted exclusively to advocacy on behalf of the National Parks System. Its mission is to protect and enhance America's National Park System for present and future generations. With field offices in Barstow and Joshua Tree, NPCA's California Desert Program works to preserve the integrity of the desert's national parks and monuments, as well as adjacent protected lands. NPCA was closely involved in the effort to establish the Tule Springs Fossil Beds National Monument in 2014, and remains deeply invested in Southern Nevada's protected lands, including Lake Mead National Recreation Area and the Old Spanish Trail National Historic Trail.

NPCA has several concerns about the loss of habitat for protected species that would result from most of the alternatives described in the RMPA/EIS, as well as a loss of ecosystem services such as carbon sequestration, and we will describe those concerns in brief fashion. We will also focus on the proposal's impact on two historic trails: the Old Spanish Trail National Historic Trail (OSTNHT) and the Salt Song Trail.

Habitat Loss and Carbon Sequestration

NPCA supports immediate and proactive climate change actions by the federal government as part of an aggressive national climate strategy. There are few existential threats to our National Parks more all-encompassing than climate change. Our public lands do have a role to play in addressing the issue of ameliorating climate change, including the production of renewable energy where it is appropriate and does minimal damage to the resources we seek to protect from climate change.

The siting and scale of the Gemini Solar Project, however, may well aggravate rather than ameliorate the effects of climate change on the Mojave Desert in southern Nevada. The preferred alternative would result in take of 215 federally

B6-1

threatened desert tortoises, according to the estimate in the RMPA/EIS, in one of the very few areas in the species' habitat where the population is not in steep decline. The technology proposed for generating and storing power at Gemini, photovoltaic panels and battery storage, can be deployed in alternative locations with far less habitat value, such as urban spaces developed on lands disposed by the BLM under the Southern Nevada Public Land Management Act of 1998.

B6-2

The assertion in the RMPA/EIS in section 3.7 (Wildlife, Migratory Birds, and Special Status Species) that mowed vegetation was "expected to rebound within a few years of construction" fails to account for differences in species composition of that regrown vegetation. While species such as creosote (*Larrea tridentata*) and bursage or burrobrush (*Ambrosia dumosa*) may well regrow within a few years, slow-growing species such as yucca and some cacti may take significantly longer to recover, if they do in fact recover.

B6-3

Intact habitat in the southwest's north-south trending valleys will be crucial to ecological resilience as the desert warms. The Gemini Solar project will add a 7,000-plus acre blockage to migration in the region of the Moapa Paiute reservation. The RMPA/EIS does not sufficiently address the impacts of this barrier to northward migration.

B6-4

Studies by the National Park Service have demonstrated that National Parks in the California Desert provide significant carbon sequestration services, at rates ranging from .118 metric tons per acre per year in Death Valley NP to .4 metric tons per acre per year in Mojave National Preserve. Though some of this sequestration is mechanical in nature, through deposition of carbon dissolved in rainwater into the subsoil, a growing body of evidence suggests that biological processes including mycorrhizal action account for a large percentage of sequestration in desert soils. These services are lost when desert shrublands are disrupted; in fact, if the caliche stored in the subsoil is breached by construction, development can actually cause release of that stored carbon. Given that the intent of the Gemini Solar proposal is to address our society's greenhouse gas emissions, the loss of carbon sequestration should be examined in the RMPA/EIS.

B6-5

Salt Song Trail

Though the proximity of the Gemini Solar site to the Salt Song Trail is mentioned briefly in the RMPA/EIS, the document includes no discussion of the project's direct impacts on the visual resources or other landscape-level qualities of Gemini Solar on the Salt Song trail corridor. Additionally, while the Moapa Paiute are indeed closely involved with the Salt Songs and the associated landscape, there are, depending on the manner of counting, between 16 and 31 other tribal groups affiliated with the Southern Paiute and Chemehuevi to whose culture the Salt Song Trail is central. While we understand that some tribal cultural concerns are delicate and inappropriate for discussion in a publicly available document, the general importance of the Salt Songs to Southern Paiute and Chemehuevi peoples across the Southwest has been well publicized by

B6-6

B6-7

Native peoples of the desert. Despite the Moapa's close proximity to the Arrow Canyon corridor of the Salt Song trail, it is our understanding that the entire trail circuit is very important to Southern Paiute and Chemehuevi peoples throughout Nevada, California, Utah, and Arizona. The impacts of Gemini Solar to their culture should be addressed more fully.

B6-7

Old Spanish Trail National Historic Trail

We are grateful for the detailed description in the RMPA/EIS of the serious, unmitigable, and largely permanent impacts the majority of the project alternatives would have on the Old Spanish Trail National Historic Trail (OSTNHT).

In particular, we are concerned with the permanent changes to the character of one of the most important identified segments of the OSTNHT corridor. As stated in the Old Spanish National Historic Trail Feasibility Study and Environmental Assessment (NPS 2001), the undeveloped surroundings of much of the OSTNHT through this area were strong factors in NPS's recommendation in favor of a National Historic Trail. In particular, the Feasibility Study said;

B6-8

The trail has very strong potential for the development of retracement opportunities. Large sections of the trail cross through undeveloped terrain...this relative lack of development facilitates public access, and minimizes possible conflicts with private land uses...

The historic character of much of the Old Spanish Trail is tied to its route through the natural environment and the existence of landscapes relatively unchanged during the trail period... in areas of the route that are relatively untouched by changes in land use — such as the mountains of Colorado and Utah and the western deserts— the setting remains much as it was historically...

The awesome surrounding landscapes and the modest physical remains of the route continue to echo and evoke the historic scene. The cumulative effect of the setting—mountains and desert, contrast, and vast vistas— creates a sense of past time and place for any visitor with sufficient knowledge of the historic travel that occurred along the route.

We are deeply concerned that all the alternatives aside from the No Action alternative would apparently result in the permanent destruction of more than a mile — 1,781 meters — of a High Potential Route Segment (HPRSEG) of the OSTNHT in the historically significant California Crossing area. This HPRSEG, on the older eastern route of the Old Spanish Trail but within sight of the western route, is significant in that the vast majority of travelers on the Old Spanish Trail during its heyday would have passed through this area. Unlike the majority of the length of the OST between Santa Fe and Los Angeles, which consists of a number of braided routes ranging over an area hundreds of miles north to south, the stretch west and south of California Crossing is a segment where those

B6-9

multiple routes converged in either direction. Cross-continental traffic was thus funneled through the project area from thousands of square miles of territory.

B6-9

Geological and pedological evidence of the passage of wagons along this stretch of the HPRSEG would be permanently damaged by construction, and inevitable wind-driven soil erosion from the construction area would damage or bury visible surficial evidence of the trail. Public access would likely be restricted, rerouted, and otherwise infringed upon due to security and public safety concerns. Even if public access was preserved along the alignment of the HPRSEG, walking for more than a mile through an intensely industrial setting would hardly be in keeping with the public experience that the establishment of the OSTNHT was intended to preserve.

B6-10

Such an accessible, undeveloped and historically significant site will become especially valuable as southern Nevada continues to urbanize. It is worth noting that the bicentennial of the Trail's period of significance would begin in 1829, at the beginning of the Gemini project's useful life. It would be a shame to deprive the public of the ability to visit and experience that history by building a massive energy development astride one of the most significant remaining sections of the trail.

B6-11

We note that nowhere in the RMPA/EIS is consultation with the OSTNHT's NPS/BLM co-administration team cited or mentioned in any way, other than to note that such co-administration exists. It is hard to imagine more knowledgeable sources of information on the trail, its resources, its history, and the potential impacts of development. If the OSTNHT's co-administrators were not in fact consulted, their input should be solicited and shared with the public.

B6-12

Conclusion: No Action Alternative

We should reiterate that NPCA is a strong supporter of renewable energy development in appropriate places. If there was some quality of the proposed Gemini Solar site that made it uniquely suited to renewable energy generation, then we might look at these and other significant unmitigable impacts in a different light. However, as we mention above, there is nothing in the technology of either photovoltaic solar power generation or battery power storage that demands that such generation and storage be consolidated into one location relatively remote from demand. It can be argued that more decentralized deployment of photovoltaic solar and battery storage carries greater social benefit, such as economic boon to owners of smaller properties such as parking lots who develop solar.

B6-13

B6-14

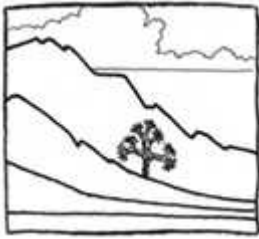
Given the serious and permanent unmitigable impact to the OSTNHT and desert tortoise habitat, as well as the as yet undescribed impacts to the Salt Song Trail and other resources mentioned above, we regretfully urge you to adopt the "No Action" alternative to preserve the Old Spanish Trail National Historic Trail for future generations of Nevadans and Americans.

B6-15

I am happy to answer any questions you might have about our comments. Again, thank you for the opportunity to comment.

A handwritten signature in cursive script that reads "Chris Clarke".

Chris Clarke
California Desert Program Manager
National Parks Conservation Association
(760) 600-0038



Basin and Range Watch

PO Box 70
Beatty NV 89003

775-553-2806, emailbasinandrange@gmail.com, www.basinandrangewatch.org



Western Watersheds Project
Cedar Canyon Road, Cima, CA 92323
775-513-1280
lcunningham@westernwatersheds.org



Morongo Basin Conservation Association
Morongo Basin Conservation Association
PO Box 24, Joshua Tree, CA 92252
info@mbconservation.org

September 5th, 2019

Letter Number B7

To:

Herman Pinales

Attn: Energy and Infrastructure Project Manager
BLM Las Vegas Field Office,
4701 N Torrey Pines Ave
Las Vegas, Nevada 89130

Email sent to: blm_nv_sndn_geminisolar@blm.gov

Re: Comments on the Draft Environmental Impact Statement for the Gemini Solar Project – DOI-BLM-NV-S010-2018-0051-EIS-Gemini Solar

Basin and Range Watch, Western Watersheds Project, and Morongo Basin Conservation Association (collectively, “conservation groups”) submit these comments on the draft Environmental Impact Statement (DEIS).

Basin and Range Watch is a 501(c)(3) non-profit working to conserve the deserts of Nevada and California and to educate the public about the diversity of life, culture, and history of the ecosystems and wild lands of the desert. Federal and many state agencies are seeking to open up millions of acres of unspoiled habitat and public land in our region to energy development. Our goal is to identify the problems of energy sprawl and find solutions that will preserve our natural ecosystems, open spaces, and quality of life for local communities. We support energy efficiency, better rooftop solar policy, and distributed generation/storage alternatives, as well as local, state and national planning for wise energy and land use following the principles of conservation biology. We have visited the site of the proposed Gemini Solar Project. We have taken photos of the region, hikes on the site and have observed unique flora and fauna on the site. In August, 2018, Basin and Range Watch submitted scoping comments for the Gemini Solar Project.

Western Watersheds Project is a non-profit organization with more than 9,500 members and supporters. Our mission is to protect and restore western watersheds and wildlife through education, public policy initiatives and legal advocacy. Western Watersheds Project and its staff and members use and enjoy the public lands and their wildlife, cultural and natural resources for health, recreational, scientific, spiritual, educational, aesthetic, and other purposes.

The Morongo Basin Conservation Association advocates for the healthy desert environment that nurtures the region's rural character, cultural wealth and economic well-being.

Introduction:

The Gemini Solar Project would be one of the largest solar projects ever approved by the Bureau of Land Management (BLM). At 7,100 acres or 11 square miles on BLM lands with identified valuable resources, this could also be the solar project that has the most intensive resource impacts. The project would be approved on high quality habitat for the desert tortoise and other wildlife. The project site also has a large quantity of rare plants and is rich in cultural resources. The BLM proposes to use vegetation mowing on a large part of the project site, but has no peer reviewed data showing that this would be better for desert tortoises or other biological resources found on the project site. It would turn the famous Valley of Fire Road into an industrial park and will also adversely impact recreational opportunities. The BLM has failed to review a full range of reasonable alternatives including off site alternatives and a reduced footprint alternative. The BLM has attempted to meet much of the streamlining requirements of Secretarial Order 3355. The draft Environmental Impact Statement (DEIS) is in the 150-page range and the timeline for scoping was reduced to 45 days. But the BLM did not meet the one-year timeline for reviewing Gemini Solar and the DEIS is lacking significant information required for reviewers to make complete meaningful comments.

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The project would also be approved amending the 1998 Las Vegas (Southern Nevada) Resource Management Plan, yet BLM has stalled its own revision of that plan. The plan outlines alternatives that would and could result in higher valued conservation designations in the region. Two of these would create a California Wash Area of Critical Environmental Concern and upgrade the Visual Resource Management Class Objective to VRM Class I VRM Class II.

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Project Timeline Should be Delayed Until the RMP is Updated:

The cancelled Southern Nevada Resource Management Plan (RMP) revision made conservation proposals for the region in 4 different alternatives. When BLM cancelled the revision in 2018, they had already received several hundred scoping comments. Many of the comments requested more conservation designations for the area. Some of the four alternatives made proposed changes to the region regarding several land use issues. Approving the Gemini Solar Project for an amendment to the 1998 plan will create far more conflicts and management issues than allowing for an updated decision managing these lands. The demographics of Southern Nevada have changed so much that using an updated RMP to manage the region would be far more stable than a plan amendment.

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No Response to Scoping Comments:

The BLM received 34 scoping comment documents (including from Basin and Range Watch and Western Watersheds Project), but the DEIS does not individually respond to any of the comments like in other EIS documents. There are no responses to scoping comments in the DEIS, Appendices or supporting documents. The level of detail in these documents has been overlooked and BLM must release a supplemental EIS to compensate for this.

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Purpose and Need:

The draft EIS states, “In accordance with FLPMA, public lands are to be managed for multiple uses that consider the long-term needs of future generations for renewable and non-renewable resources.” (DEIS at 1-1) But this is only a partial and selective quote of the Federal Land Policy Management Act (FLPMA) concerning multiple use, where the same mandate to manage public lands must also include wildlife and fish, scenic values, and historic values, as well as recreation:

...a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output. (43 U.S. Code § 1702(c))

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A 30-year lease to mow, apply herbicides, drive over, and grade such a large area of public lands in Mojave Desert ecosystems would greatly impair the quality of the environment here, and full restoration of this arid land could take centuries, thus being a virtually permanent impairment. BLM should not simply look at a purpose and need that seeks the greatest economic return on these public lands, but must also consider and balance the watershed, wildlife and fish, natural scenic values, and historic values of the land. BLM’s Purpose and Need is faulty for not taking these mandates of FLPMA into account.

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The Purpose and Need Statement responds to the applicant’s request to build a solar project in the region, but by listing the applicant’s objectives directly under the statement, the BLM is self-fulfilling the statement to only reflect on too narrow a scope of alternatives. The statement is crafted to make approval of the project easier for the BLM and would accommodate the applicant. The BLM’s National Environmental Policy Act handbook states: “[t]he purpose and need statement for an externally generated action must describe the BLM purpose and need, not an applicant’s or external proponent’s purpose and need (40 CFR 1502.13).”

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See 40 C.F.R. §§ 1500.1(b); 1502.13; *Env’tl. Law & Policy Ctr. v. U.S. Nuclear Reg. Comm.*, 470 F.3d 676 (7th Cir. 2006); *Simmons v. U.S. Army Corps of Eng’rs*, 120 F.3d 664 (7th Cir. 1997). “An agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative . . . would accomplish the goals of the agency’s action, and the EIS would become a foreordained formality. *Nat’l Parks & Conservation Ass’n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1070 (9th Cir. 2010).

Moreover, an agency may not allow the economic needs and goals of a private applicant to define the purpose and need, and hence the inevitable outcome, of an EIS. *Id.* Federal agencies must “exercise a degree of skepticism in dealing with self-serving statements from a prime

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beneficiary of the project and to look at the general goal of the project rather than only those alternatives by which a particular applicant can reach its own specific goals.” Env’tl. Law & Policy Ctr., 470 F.3d at 683 (quoting Simmons, 120 F.3d at 666).

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The project would be built in a region that has several valuable resources that have been designated conservation status by both the 1998 Las Vegas Resource Management Plan and the Clark County Multi-Species Habitat Conservation Plan. In fact, the impacts would be so great, that BLM would need to amend the 1998 RMP just to be able to legally approve the project. All resources must be officially compromised by the agency for approval. The project would impact valuable, visual, recreational, cultural, biological, hydrologic and socio-economic resources. The BLM could easily craft a Purpose and Need Statement that prioritizes the conservation of these resources. Doing so would allow for a larger and more reasonable range of alternatives. As it stands now, the statement does not provide a broad enough or accurate enough scope to allow better alternatives.

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BLM has rejected more environmentally acceptable alternatives based on the idea that these alternatives do not meet the scope of the Purpose and Need Statement. BLM is only allowing a specific Purpose and Need that is narrow to the requests of the applicant, but this shows a biased towards a project. A superior Purpose and Need Statement would incorporate better and more responsible environmental protections. The BLM has left environmental conservation out of the Purpose and Need Statement and this eliminates many major concerns from stakeholders. A broader purpose and need statement can be written for this project that will consider the environmental concerns of many public land- owners.

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Gemini Solar is a covered project under ***Title 41 of Fixing America's Surface Transportation Act (FAST-41)***. FAST-41 established new coordination and oversight procedures for infrastructure projects being reviewed by Federal agencies. The intent of the act is to improve early coordination between government agencies, increase public transparency, and increase government accountability.

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If the goal is indeed to increase accountability, public transparency and provide early coordination, this is not in the relevant scope of the project review. This is simply a newer administrative procedure that should not influence the outcome of the project.

The Purpose and Need Statement should consider the following state and federal land use plans and laws:

The Bureau of Land Management Western Solar Plan which was designated under the *Solar Programmatic Environmental Impact Statement*.¹ Gemini Solar Project would be located outside of these Designated Leasing Areas or Solar Energy Zones. The Gemini site was not

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¹ <http://blmsolar.anl.gov/program/>

designated as appropriate for solar energy. There are far too many resource conflicts. This should also be an alternative for the DEIS.

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For established Designated Leasing Areas (Solar Energy Zones):

The Bureau of Land Management (BLM) defines a solar energy zone (SEZ) as an area well suited for utility-scale production of solar energy, where the BLM will prioritize solar energy and associated transmission infrastructure development. A discussion of the criteria used to identify SEZs is provided in Section 2.2.2.2 of the Draft Solar PEIS

Through the Solar PEIS ROD, the BLM established a comprehensive Solar Energy Program that allows the permitting of future solar energy development projects on public lands to proceed in a more efficient, standardized, and environmentally responsible manner.

The 1998 Las Vegas (Southern Nevada) Resource Management Plan:

The BLM chose not to revise the 1998 RMP. As it stands, the RMP protects the wildlife, visual resources, Areas of Critical Environmental Concern, cultural resources and recreational access of the project site and region. In order to approve Gemini Solar, BLM must amend this plan to compromise these resources.

For unknown reasons, the BLM Las Vegas Field office cancelled the revision of the Southern Nevada RMP. That revision could have designated new Areas of Critical Environmental Concern in the area. In particular, Clark County nominated California Wash to be designated as an ACEC.

The Purpose and Need Statement as it stands now, cannot consider the updates to the RMP because the RMP was cancelled. Yet several thousand commenters have made suggestions.

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The Clark County Multi-Species Habitat Conservation Plan:

Several of the species that will be impacted by Gemini Solar are protected under the Clark County Multi-Species Habitat Conservation Plan.² The County has also nominated a major portion of California Wash to be protected as an Area of Critical Environmental Concern.

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The Desert Tortoise Recovery Plan:

Gemini Solar will have a major impact on the threatened desert tortoise. A Recovery Plan for the tortoise was written in 1994 and updated in 2011.³

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² <http://www.clarkcountynv.gov/airquality/dcp/Pages/CurrentHCP.aspx>

³ https://www.fws.gov/nevada/desert_tortoise/dtro/dtro_recovery_plan.html

A "recovery plan" determines the "threats" that are hurting the species, suggests actions that will reduce or eliminate these threats so species can fully recover, and recommends ways to ensure that the population remains stable.

The goal of the Endangered Species Act (ESA) is to conserve the ecosystems upon which listed species depend and to recover species to levels where protection under the ESA is no longer necessary. Section 4 of the ESA directs the Service to develop recovery plans for the conservation and survival of a listed species.

Key elements of the revised plan include the following:

- Develop, support, and build partnerships to facilitate recovery;
- Protect existing populations and habitat, instituting habitat restoration where necessary;
- Augment depleted populations in a strategic, experimental manner;
- Monitor progress toward recovery, including population trend and effectiveness monitoring;
- Conduct applied research and modeling in support of recovery efforts within a strategic framework; and
- Implement a formal adaptive management program that integrates new information and utilizes conceptual models that link management actions to predicted responses by Mojave desert tortoise populations or their habitat.

The DEIS fails to integrate new information about drastic declines in most Recovery Units of the Mojave Desert tortoise in the last 10 years, including new information about the most efficient genetic connectivity corridors between Critical Habitat Units that include the California Wash area. We discuss more about these details of desert tortoise declines below.

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The Moapa Dace Recovery Plan:

The Moapa dace is listed as Endangered under the federal Endangered Species Act. Water use from California Wash could impact the habitat for this species in the Muddy River. The recovery plan of 1983⁴ should be listed in the Purpose and Need Statement.

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The Utility Environmental Protection Act of Nevada:

The Utility Environmental Protection Act (UEPA) was enacted in 1971 to address environmental issues related to the construction of utility facilities. UEPA permits granted by the Public

⁴ https://www.fws.gov/nevada/protected_species/fish/species/moapa_dace.html

Utilities Commission of Nevada (PUCN) apply to: Conventional power plants. ... Electric transmission facilities rated over 200 kilovolts.

The PUCN cannot approve or modify a permit unless it finds and determines:

▪ *The probable effects on the environment.* ▪ *The extent to which facility is needed for reliability if it emits greenhouse gases and does not use renewable energy as its primary source for generating electricity.* ▪ *The need for the facility balances any adverse effects on the environment.* ▪ *The facility represents the minimum adverse effects on the environment given current technology and feasible alternatives.* ▪ *All permits, licenses and approvals required by federal, state, and local jurisdictions are obtained or in the process of being obtained for construction.* ▪ *The facility will serve the public interest.*⁵

The facility will be so large that it will have a huge construction carbon footprint. It will crush desert vegetation and biological soil crusts which sequester CO₂. It will require several very large fossil fuel powered earth movers to be used for two years. It will impact and kill Federally Threatened desert tortoises. It will remove a large swath of habitat for the very rare threecorner milkvetch. It will destroy historical resources and impair recreational access to the area. There is simply no way an 11 square mile industrial development can avoid adverse effects to the environment and there is no mitigation that can compensate for the loss. Due to the several alternative locations for this kind of energy, a project with so many adverse impacts falls short of serving the public interest. The project does not meet the standards of the UEPA. There are more current and feasible alternatives, including Distributed Energy resources that we outlined in our scoping comment, but that were unduly rejected for further analysis.

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The Nevada Natural Heritage Program (NNHP):

The mission of NNHP is to develop and maintain a cost-effective, central information source and inventory of the locations, biology and status of all threatened, endangered, rare and at-risk plants and animals in Nevada. The Moapa dace, threecorner milkvetch, Mojave desert tortoise, Pallid bat, loggerhead shrike and Gila monster are some of the species recognized by NNHP.⁶

The Nevada Division of Forestry State Endangered Species Program:

Threecorner milkvetch is protected under this program.

NRS 527.260 Legislative finding.

⁵ http://puc.nv.gov/Utilities/Construction_Permits/General_UEPA/

⁶ www.heritage.nv.gov

1. The Legislature finds that:

(a) The economic growth of the State of Nevada has been attended with some serious and unfortunate consequences. Nevada has experienced the extermination or extirpation of some of her native species of flora. Serious losses have occurred and are occurring in other species of flora with important economic, educational, historical, political, recreational, scientific and aesthetic values.

(b) The people of the State of Nevada have an obligation to conserve and protect the various species of flora which are threatened with extinction.

2. The purpose of NRS 527.260 to 527.300, inclusive, is to provide a program for the conservation, protection, restoration and propagation of selected species of flora and for the perpetuation of the habitats of such species.⁷

Cancellation of the Crescent Peak Wind Project:

The Interior Department cancelled the Crescent Peak Wind project application on November 19th, 2018. The Crescent Peak Wind Project was also in the Southern Nevada BLM District planning area. Like California Wash, it is also considered a region in the BLM district with valuable resources.

The decision was based on the project's lack of conformance with the Las Vegas Resource Management Plan and the Interior Department cited "conflicts with resource uses". These include:

1. Public Review: The BLM received 216 comments on the project and most of them opposed the project over biological, visual, cultural and recreational impacts. The BLM's attempt to downgrade the Visual Resource Management Class in the region received many objections.
2. Wildlife: The project would disrupt bighorn sheep linkage and the area has a high density of eagles, raptors and other birds. Seventeen golden eagle nests were located in the project area. The letter cited the two golden eagles that were killed by Nevada's Spring Valley Wind Project.
3. Cultural and Tribal Concerns: The project would be built in a very important cultural landscape. The Salt Song Trail and Sprit Mountain have deep spiritual significance to the Colorado River Tribes.

⁷ <http://forestry.nv.gov/forestry-resources/state-threatened-and-endangers-species-program/>

In the letter,⁸ the Department of the Interior concluded that “it is not in the public interest to continue to process the Right of Way Application”.

Gemini Solar Project would be built in a high-quality recreation area with a protected visual class. Bighorn sheep have been seen on the site and the region is important to other wildlife. The cultural resources are valued and protected. If Interior can cancel Crescent Peak Wind based on these resource conflicts, BLM can most certainly select a No Action Alternative for Gemini Solar due to the large resource conflicts that would be inflicted. By emphasizing these protected resources in the Purpose and Need Statement, BLM could better evaluate their future protection and conservation in the alternatives section.

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Alternatives:

Under the National Environmental Policy Act, the BLM is required to consider a full range of alternatives.

The NEPA directs the BLM to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources;...” (NEPA Sec102(2)(E))

The conservation groups have reviewed the proposed action and all alternatives. We have concluded that the No Action Alternative is the most sensible for this project due to the great impacts it would cause. The continuing changes to this project and converting it to photovoltaic have not eliminated major conflicts involving hydrology, biological resources, cultural resources, visual resources, air quality and alternatives.

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But the BLM still needs to review the full range of alternatives. According to the BLM’s NEPA Handbook: *“For renewable energy rights-of-way, there are many different types of alternatives that are considered by the BLM and the applicant during pre-application activities and that are suggested to the BLM by external parties through scoping and comments on the draft NEPA document. These alternatives typically include: modified site configurations (e.g., varied turbine or solar panel layouts, or different configurations for support and access facilities), modifications to the proposed technology (e.g., wet vs. dry cooling), different technologies (e.g., photovoltaic vs. concentrated solar power), other BLM land locations, non-Federal land locations, **reduced project footprint/MW**, and phased construction.”*

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The BLM failed to review a reduced footprint alternative for Gemini Solar. At the public meetings, BLM told us that the all mowing alternative satisfies the requirement to review a reduced footprint alternative. We believe this is an oversight and that a Supplemental Environmental Impact Statement should be prepared to cover these categories.

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As the BLM has pointed out in public meetings, mowing vegetation on 7,100 acres will still create great impacts. Because there are no peer reviewed studies concerning the success of

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⁸ <http://basinandrangewatch.org/Crescent%20Peak%20Wind%20Nov%2019%202018-Interior.pdf>

vegetation mowing relating to the desert tortoise, it only makes sense to try this experiment on a smaller footprint. ↑ [B7-36]

The following impacts will be associated with vegetation mowing:

1. Vegetation mowing creates a large amount of fugitive dust. [B7-37]
2. Vegetation mowing uses vehicles that weighs tens of thousands of pounds running over multiple habitats. [B7-38]
3. Vegetation mowing will destroy habitats for rare plants including over 700 acres or one quarter of the habitat for threecorner milkvetch, one of Nevada's rarest plants. [B7-39]
4. Vegetation mowing on 11 square miles will directly kill many thousands of plants and animals. These include kangaroo rats, desert iguanas, horned lizards, badgers, kit foxes, bird nests, countess insect species, tarantulas, - the list is too big. [B7-40]
5. Vegetation mowing disturbs stable soils and proliferates invasive weeds. This can be seen on the Pahrump Solar Project. [B7-41]
6. Vegetation mowing and routine maintenance compacts soils and creates problems for burrowing animals. [B7-42]
7. Vegetation mowing will disturb aeolian habitat and there is no prediction on how long that would take to recover. [B7-43]
8. Loud machines could deafen animals that are not crushed. [B7-44]

The vehicles used for vegetation mowing weigh tens of thousands of pounds, far more than the heaviest species out there. [B7-45]

In 2005, the Medford Oregon BLM district reviewed the Timber Mountain Recreation Plan Environmental Impact Statement.⁹ This is a management plan for an off-highway vehicle recreation area. BLM looked at impacted to cultural, biological, visual, and recreational resources. There were 4 action alternatives including reduced route and recreation alternatives.

While Off Highway Vehicle Recreation is different from vegetation mowing, there will be similar impacts. Afterall, there are no roads where the mowers will be used. [B7-46]

We made observations of other utility-scale solar projects where mowing of creosote-bursage desert was undertaken in the solar field. If Mojave yuccas or taller vegetation such as catclaw acacias are present, these would likely be masticated, as they grow too tall to be in a solar field. The amount of construction disturbance on the Mojave Desert scrub is unacceptable: at the 780-acre Sunshine Valley Solar project in Amargosa Valley NV, we observed high impacts to the creosote-bursage desert in July and August 2019: masticators driving over the delicate desert soils and desert pavement; several large tractor-trailer semi-trucks delivering equipment

⁹ https://www.blm.gov/or/districts/medford/plans/files/DEIS_Timber_Mtn_RMP.pdf

driving out on new roads bladed and bulldozed across the Mojave Desert; busloads of workers; approximately 50 passenger vehicles and pick-up trucks parking on the edges, in newly-bladed parking lots, and driving across the desert for surveys, construction and security details; about 30 UTVs/ATVs driving across the desert; heavy equipment to pound the solar facility framework poles into the ground, and more. All this construction traffic created dust whirlwinds and clouds of fine particulates as the desert surface was significantly disturbed during mowing and construction of the solar panel rows. Further desert soil was damaged on adjacent lands as large new power poles and gen-tie lines were constructed, and a new substation.

Desert pavement, biological soil crusts, native annual plants, native perennial forbs, and the root systems of many shrubs would be significantly damaged, disturbed, or destroyed by these activities, and lasting effects would occur for decades. Animal burrows would be collapsed and small animal species crushed or scared away from their territories and cover.

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Alternatives, Alternative Locations, Solar Energy Zone (Designated Leasing Area), and Distributed Generation Alternatives:

In 2012, the Western Solar Plan approved 19 Solar Energy Zones or Designated Leasing Areas. While this review had many conflicts, the idea was to put the solar energy where it has the least impacts. These zones avoid the high concentrations of areas with biological and cultural resources. The BLM rejects this alternative because the Solar Energy Zones (other BLM lands) are not in the region. Again, BLM is basing the DEIS on what the applicant wants, not the best possible solution for the situation. It is not the responsibility of the BLM, the public or all of the sensitive resources on this site to accommodate Solar Partners LLC. This is a private company. A broader Purpose and Need Statement would allow the BLM to consider a more reasonable range of alternatives.

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Reduced Footprint Alternative:

This would satisfy BLM's requirement to review the full range of alternatives and could also reduce impacts to the Old Spanish Trail, visual resources, air quality, desert tortoise and all biological resources. BLM could also avoid the entire threecorner milkvetch habitat by considering a reduced footprint alternative. It is clearly unreasonable to not consider this. A supplemental EIS should be written for this reason alone.

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Conservation Alternative/Resource Management Plan (RMP) Revision:

The project area could be amended to create a Conservation Alternative for the region. Or better yet, the project review could be placed on hold until a revision of the 1998 RMP can be made. Alternative 2 in the cancelled RMP revision for example did identify Lands With Wilderness Characteristics next to the Muddy Mountains Wilderness Area and right next to the project site. Alternative 2 also proposed to upgrade the VRM Classes in the area to VRM Class I and VRM Class II. Alternative 2 would have greatly expanded the Extensive Recreation

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Management Area around the Muddy Mountains and the Project Site. Alternative 2 would have made the entire Gemini Site an Avoidance and Exclusion Area for large scale solar projects. Gemini would not have been able to be built under this alternative. Delaying this review would allow for more evaluation of the cancelled RPM proposals. The BLM has never said it would not start to revise the RMP again. But if this review must go forward, we request BLM review a Conservation Alternative for the project which would not only reject the solar application, but amend the 1998 RMP to avoid and exclude large-scale solar on the site to protect resources.

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The BLM did not adequately respond to the Basin and Range Watch request for an Area of Critical Environmental Concern/Conservation/No Project Alternative in the scoping comments:

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Existing Project Storage Alternative:

Several large-scale solar projects have been built in Nevada and neighboring California. Only one of these has incorporated storage and that is the Crescent Dunes Solar Project, but that is concentrated thermal technology and the project has had multiple complications. So far, no battery storage has been incorporated in any of the existing projects. Some of these are the Boulder City projects, Silver State South, Stateline, Ivanpah, Playa and Moapa. The BLM could easily select a No Action Alternative for Gemini based on existing projects that would only have to add ten acres to incorporate storage. The batteries will have to be cooled in the summer on the Gemini site. Temperatures can easily top 115 degrees out there and batteries will need to be cooled long after sunset. This would be a parasitic load and partially defeats the reason for the project. Storage facilities would not even have to be on the site and could easily be put closer to the point of use.

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Distributed Generation Alternative:

The BLM rejected our long comments on distributed generation for the scoping phase of the project. BLM responded to very few of the issues we raised. Again, the reasoning is that these areas are not close enough to the proposed project site. There was never a mandate to develop California Wash like this and BLM simply did not do their homework on distributed generation. The BLM rejects DG because they say DG facilities can only generate ten megawatts. But the goal is to use solar energy, so BLM could simply do math and determine that 65 ten megawatt sites could fulfill this need.

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We request that the BLM reconsiders our long scoping comments on DG in a supplemental EIS.

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In September, 2016, Dr Rebecca Hernandez of University of California, Davis public Solar Energy Potential on the Largest Rooftops in the United States.

From her study:

A study was conducted on the rooftops of 5,418 elementary schools in Korea to determine the feasibility of achieving net-zero energy solar buildings through rooftop PV systems (Koo 2013).

The study found that the potential for the building to become net zero-energy is higher if the ratio of (person/roof area) is lower (Koo 2013). Another study by Ordonez compared the technical potential of rooftop PV system on residential homes in Spain with the total energy consumption of the residential sector in the country and found that PV installations would satisfy 78.89% of all energy needs (Ordonez 2010). With increasing energy efficiency and reduction in energy consumption, rooftop PV systems can be a viable method to optimizing energy generation.¹⁰

Affected Environment/Environmental Consequences:

The Draft EIS says, “Mitigation measures are solutions to environmental impacts that reduce the intensity of or eliminate the impacts. Mitigation measures are designed to be adequate and effective in accordance with CEQ regulations (40 CFR 1508.20).” (EIS at 3-1)

These mitigation measures are not “solutions” but rather experiments, and may not solve the continuing decline of rare and threatened species.

The BLM did not adequately respond to the Basin and Range Watch request for an Area of Critical Environmental Concern/Conservation/No Project Alternative in the scoping comments:

Basin and Range Watch and Western Watersheds Project requested an alternative that was for an ACEC/Conservation/No Project Alternative. Two Areas of Critical Environmental Concern (ACEC) were nominated for this region under the revision of the Southern Nevada Resource Management Plan. These ACEC alternative were being considered under Alternative 2 for the Southern Nevada Resource Management Plan.

The BLM would have to evaluate an additional Land Use Plan amendment in the DEIS to consider this alternative. An ACEC could be viewed as an action alternative if provisions are made to close illegal roads, eliminate invasive plants, or construct interpretive signage at the ACEC.

The first nomination is the California Wash Area of Critical Environmental Concern. It would designate over 11,000 acres as an ACEC to protect cultural and historic values as well as vegetation communities. It would also be instrumental in protecting desert tortoise populations. The nomination could overlap with the solar project.

The second nomination that partially overlaps with the south side if the solar proposal is the Bitter Springs ACEC. This is a 61,000-acre nomination designed to protect bighorn sheep, scenic values and vegetation communities.

¹⁰ https://ncst.ucdavis.edu/wp-content/uploads/2016/08/11-03-2016-1Boonlue_Robles_USDOT-NCST-Student-Fellow-Report.pdf

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We would also like to request that the Visual VRM Classes be upgraded to VRM I and VRM II to highlight this alternative.

This alternative should be separate from, and in addition to, the “no action” alternative required under NEPA, which would simply deny the right-of-way requested by the developer. This separate action alternative would provide BLM the efficiency of using a single EIS to determine whether to designate the area where the Project is proposed for additional protection as the optimal use of the area for the benefit of the public and the environment

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Visual Resource Impacts:

The Project would be built in a high conflict Visual Resource area. Although the lands directly impacted would be in the VRM III Class Objective, the massive size of the project would impact other conservation and specially designated areas in the region including the Muddy Mountains Wilderness Area, the Bitter Springs Backcountry Byway, California Wash, The Old Spanish Trail and as far away as the Desert National Wildlife Refuge. Because of this, these resources should be reviewed for Visual Impacts under VRM II and even VRM I standards.

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VRM Class I Objective: To preserve the existing character of the landscape. Allowed Level of Change: This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

VRM Class II Objective: To retain the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

But as BLM is aware, the project fails to even meet VRM Class III objectives:

VRM Class III Objective: To partially retain the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

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The BLM has chosen to cancel their update and environmental review on the Las Vegas Resource Management Plan. BLM must now downgrade the Visual Class of the region to VRM IV knowing that this project will greatly compromise the visual quality of the landscape. Therefore, the BLM should update the RMP before reviewing Gemini Solar.

Visual resources must be protected under the Federal Land Policy and Management Act of 1976, 43 U.S.C. 1701 et. seq.;

1. Section 102 (a)(8). States that "...the public lands be managed in a manner that will protect the quality of the...scenic...values...."

2. Section 103 (c). Identifies "scenic values" as one of the resources for which public land should be managed.

3. Section 201 (a). States that "The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including...scenic values)...."

4. Section 505 (a). Requires that "Each right-of-way shall contain terms and conditions which will... minimize damage to the scenic and esthetic values...."

B. National Environmental Policy Act of 1969, 43 U.S.C. 4321 et. seq.;

1. Section 101 (b). Requires measures be taken to " ...assure for all American...esthetically pleasing surroundings...."

2. Section 102. Requires agencies to "Utilize a systematic, interdisciplinary approach which will ensure the integrated use of...Environmental Design Arts in the planning and decision making...."5

Both NEPA and FLPMA recommend that Visual Resource Management be decided on the RMP level. The Action Alternatives of the cancelled RMP prosed to upgrade the Visual Class of the region.

B7-62

On a cumulative level, there are distant visual impacts including transmission lines, Highway 15 and the Moapa Solar Project. But the topography of the California Wash area is a large, unbroken alluvial fan or bajada. Even with distant visual disturbances, California Wash is remote and vast and if left alone, maintains a wild, undeveloped appearance.

B7-63

Glint and Glare:

The visual impact analysis of the Gemini Solar DEIS and Glint and Glare Report is simply incomplete due to the fact that the proponent has not chosen which photovoltaic technology would be used. Would they be Monocrystalline, Polycrystalline, Bi-facial or Thin-film? Since BLM is not saying, we are wondering if thin-film will be chosen. At the public meetings for the Draft Environmental Impact Statement, several people from the company First Solar were attending. First Solar builds large photovoltaic projects. They always use highly reflective thin-film panels. If First Solar builds Gemini Solar, it is likely that large, flashing glints would occur at several locations. This would be disruptive to recreational, wilderness and scenic values. It will also present hazards for any aircraft flying over this project. We can only speculate about this because BLM will not predetermine what PV technology will be used.

B7-64

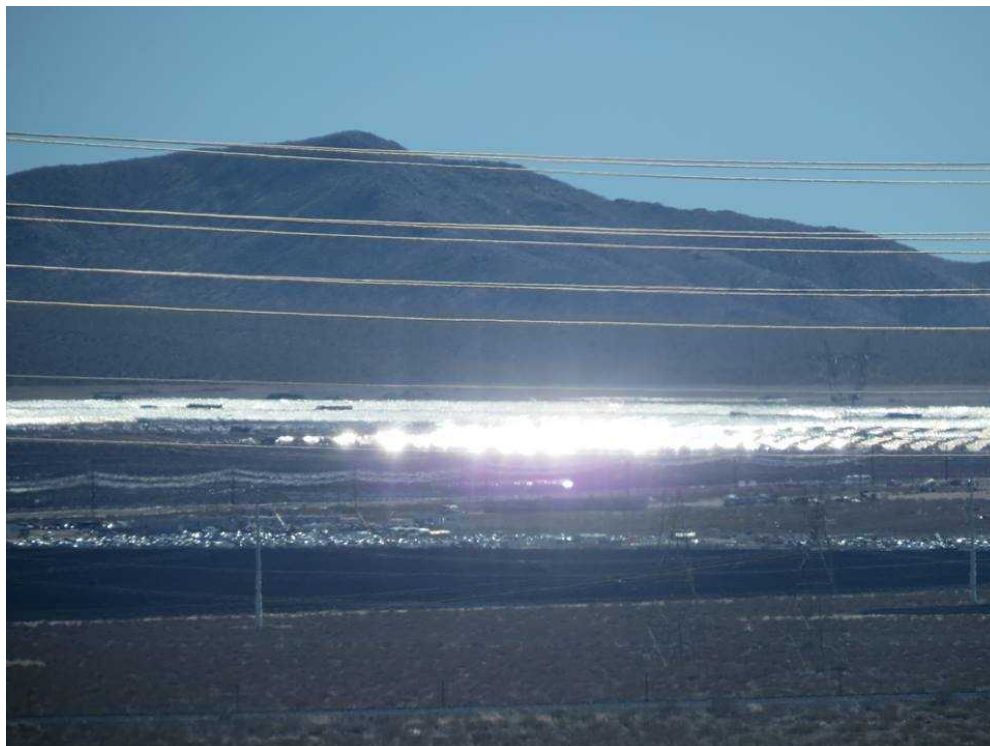
The Glint and Glare Report analyzes 30 Observation points. It concludes that most of them would not produce these glint and glare impacts. But since we don't know what technology

B7-65

would be used and the panels could use single axis-tracking, it is very difficult to determine the potential impacts during all times of year. ↑ B7-65

The DEIS states: *“The cumulative projects may result in glint and glare from discrete locations. However, no cumulative projects that could result in glint and glare would be visible from observation points where glint and glare from the proposed action could occur.”*

The KOP locations are limited and single axis tracking at different times of year make this statement quite speculative.



^Above is a glint from the Silver State South Solar Project near Primm, Nevada from Hwy 15.

Inadequate Key Observation Point Simulations:

The Key Observation Point (KOP) simulations in the DEIS are inadequate and minimize the visual impacts of this project. Again, we must point out that the project would be 11 square miles. All of BLM and Panorama’s 40 KOP’s are inadequate and we believe were intentionally designed to minimize these large visual impacts. Only KOP 39 gives a good example of what the project may look like. ↑ B7-66

Some good examples of this are KOP 19. This KOP should have shown the solar project in much better contrast. The photo is faded and one must look closely to see the solar project simulation. This is not reality. The project would be much more visible from this view. ↓ B7-67

Figure 3.10-36 KOP 19 – Visual Simulation of the All Mowing Alternative



^ KOP 19 appears to intentionally minimize the view of Gemini Solar from the Muddy Mountains. A simulation on a more standard clear day would show sky reflection better.

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B7-67

Equally, the KOP simulations minimize the view of what a mowed vegetation site would actually look like. The BLM did not provide a good KOP of the site after mowing and before solar panels are installed. This would show a much better contrast.

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B7-68

Figure 3.10-31 KOP 14 – Visual Simulation of the All Mowing Alternative



^The mowing alternative KOP is not useful at all.

We believe that the KOP simulations could and should use existing solar projects as references. If that were done, BLM would have far more accurate simulations of the actual impacts to the project site. All but one of the photos are taken by Basin and Range Watch. These photos would be great examples:

B7-69



^Silver State South Project near Primm, Nevada



^Silver State South Project near Primm, Nevada



^Silver State South Project near Primm, Nevada



^Silver State South Project near Primm, Nevada



^Mowing and grubbing vegetation on the Ivanpah Solar Project, California



^View looking north towards the project site from Muddy Peak in the Muddy Mountains Wilderness Area. There are no KOP simulations from Muddy Peak. (Photo by Kevin Kingma)

Dark skies will also be impacted by construction activity and on -site security.

B7-70

Vegetation mowing would require solar panels to stand higher off the ground which would result in bigger visual impacts. Allowing vegetation growth at 24 inches under 15-foot solar panels would do little to minimize visual impacts.

B7-71

A Supplemental EIS should provide better photo simulations of this project site. More simulations should be created including some from the Muddy Mountains, a dark skies simulation and one from the air which would cover scenic air tours.

B7-72

A Conservation Alternative that upgrades the Visual Class to VRM Class I and II for the project site should be considered. A conservation designation could be considered an Action Alternative if enhancements such as more law enforcement patrols or educational signs for tortoise protection are made. Or BLM could delay this review until a new Resource Management Plan is updated.

B7-73

Lands with Wilderness Characteristics (LWC):

The canceled Southern Nevada Resource Management Plan identified LWC lands in the project area adjacent to the Muddy Mountains Wilderness Area.

Section 201 of Federal Land Management Policy Act (FLPMA) requires the BLM to maintain, on a continuing basis, an inventory of all public lands and their resources and other values, which includes wilderness characteristics. It also provides that the preparation and maintenance of the inventory shall not, of itself, change or prevent change of the management or use of public lands.

Cancelling the RMP review also eliminates consideration of future LWC designations in the area. This should be reviewed in a Supplemental EIS.

B7-74

The DEIS states that the project site does not meet the conditions to qualify as Lands with Wilderness Characteristics. From BLM's own guidelines: *For an area to qualify as lands with wilderness characteristics, it must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. It may also possess supplemental values.*

B7-75

The area is very large. The project site alone is about 11 square miles and located in an undeveloped area spanning over 30,000 acres which also covers the solitude. As far as naturalness goes, the area has very pristine Mojave Desert habitats with very little disturbance. BLM's own biology reports document a great biodiversity on the site and appearance-wise, it is a vast undeveloped bajada with sweeping mountain views. The region has great recreational value and is part of the experience of visiting Valley of Fire State Park. BLM obviously felt differently about the region in 2014 when they considered LWC for the region in Alternative 2 of the RMP.

Cultural Resources/Old Spanish Trail:

The DEIS states: *No adverse impacts on wildlife migration that could affect Native American religious concerns are expected to occur. A well-established herd of bighorn sheep is present in the Muddy Mountains and Valley of Fire region; however, the bighorn sheep do not regularly use the Project site, and adverse effects on their migration patterns are not expected. Desert tortoise is often mentioned by the Moapa Band of Paiutes as a species that should be protected and was once a food source (Stoffle, R.W., and H.F. Dobyns 1983).*

B7-76

Bighorn sheep sign was found on the project site during biological surveys. If bighorn sign is found somewhere, bighorn use the site. Lower bajadas are often used by bighorn during winter months.

As BLM mentions, their mowing alternative was designed partly to preserve desert tortoise connectivity which is a kind of wildlife migration.

Old Spanish Trail:

The DEIS states: “As noted in the National Register Bulletin 15, published by the NPS, ‘All properties change over time. It is not necessary for a property to retain all its historic and physical features or characteristics. The property must retain; however, the essential physical features that enable it to convey its historic identity... A property that is significant for its historic association is eligible if it retains the essential physical features that made up its character or appearance during the period of its association with the important event, historical pattern, or person(s). If it is a site (such as a treaty site) where no material culture remains, the setting must be intact.’ The California Crossing of the OSNHT is an illustration of this scenario.”

Even with mitigation and a mowing alternative, it would be impossible for the BLM to retain the essential physical features that enable it to convey its historic identity. Hiding the panels with an Earth-tone painted fence will not solve this issue. There is no mitigation that can do this. The original application for Gemini Solar is over 44,000 acres and BLM has provided no alternative that would either move the project to a more distant part of the original application. BLM has not provided a reduced footprint alternative and most importantly, BLM has not provided an off -site alternative. It appears that the BLM would prefer to see the trail impacted before considering more reasonable alternatives. The Old Spanish Trail was Congressionally designated and put in the jurisdiction of the National Park Service. It is disappointing that BLM has not taken more measures to protect it from this kind of development.

Surface Hydrology and the Mowing Alternatives:

While the two alternatives that use vegetation mowing are being planned to have a more minimal impact on the biological resources of the area, it should be noted that the configuration of the solar panels will drastically alter runoff patterns. During monsoons, heavy rain will channel off the solar panels. The erosion patterns will depend on which way the axis tracking is pointing the solar panels. This could cause great erosion and possibly help encourage the growth of non-native and invasive plants.

Groundwater:

Construction would use 2,000 acre-feet and 20 acre-feet per year would be used for maintenance. While the BLM models do determine that this will not cause a long-term draw-down, through Interim Order #1303, the State Engineer has placed a moratorium on new water appropriations in the flow system until a sustainable yield amount can be determined in Basin 218 and California Wash. The cumulative scenario of future development in the region makes this a long-term threat to water resources. This would impact riparian areas, local water supply, and the Moapa dace.

Geology and Soils:

When a shallow layer of rocks lies over fine sand and silt, this forms a natural desert pavement formed by Aeolian processes. Desert pavements are found on alluvial fans and piedmonts below mountains in the Mojave and Sonoran Deserts. Stones over fine sediments may form a

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B7-81

weak pavement, or if derived from volcanic or limestone sources, may be densely packed, interlocking, and resistant. Wind-blown silts and sands collect in between and below the gravel pavement. Varnish usually colors the rock surfaces exposed to air a darker color, and can be useful for aging the pavement. Varnish is the result of surface evaporation of various salts on the rock, building up a crust.

Dr. Boris Poff, hydrologist at Mojave National Preserve, gave testimony at the Calico Solar Project evidentiary hearing held by the California Energy Commission in Barstow, California, on August 5, 2010. The rock surface of desert pavements stabilizes fine sediments underneath, and may potentially increase rainwater infiltration. When they are disturbed, desert pavements lose this function and surface run-off increases, as does erosion and downhill sedimentation.

Many desert pavements are extremely old, taking thousands of years to develop. Other desert pavements form more quickly, and can hide archaeological artifacts under them.

Old roads through desert pavements in the Mojave and Colorado Desert of California are still starkly visible after more than 100 years, and recovery may take centuries. These rare and sensitive resources can easily be destroyed by vehicle tracks driving over the stones, dislodging them and moving them, or crushing and breaking the rocks.

Haff (2001 at 661) described the delicate nature of desert pavements in the Mojave Desert:

Desert pavement surfaces are typically mechanically weak. Most surface clasts on well-developed pavements lie in edge-to-edge contact with their neighbors, somewhat like the mosaic on a tiled floor. Clasts are seated in the underlying fine-grained matrix, but they are not strongly cemented to each other or to the matrix. Pavement stones are often easily dislodged by a footstep. Long-term pavement stability is a function of isolation from disruptive forces, not of strength of the pavement itself. This type of stability may be termed “environmental stability” to distinguish it from a stability gained from inherent mechanical resistance to physical disruption such as characterizes duricrusts.

All desert pavement should be strictly avoided to prevent disturbance and loss of sensitive resources.

B7-82

Caliche is also present commonly on the project site, and post pile-driving could break up these caliche layers that are important for tortoise burrows, as well as possibly for groundwater retention. More analysis needs to be done concerning the impacts of pile-driving on caliche soils, and the very long-lasting impacts this will have.

B7-83

Sandy soils and sand-transport corridors could be greatly disrupted and disturbed. The EIS at 3-22 says: “Native vegetation, however, would not be expected to regrow on the Project site beneath the panels in most areas.”

B7-84

And again: “Increased erosion on the Project site from stormwater overland flows could result in increased deposition of fine-grained sediments into the surrounding washes, which would likely flow downstream and off site before settling out of the washes. Because no uses such as agriculture or built structures are located downstream for up to 13 miles (21 kilometers), periodic increases in fine-grained sediment loads and deposition are not expected to have adverse effects. Deposition of fine sand could have beneficial effects on sensitive plant species, such as threecorner milkvetch.” (DEIS at 3-22)

We disagree that large construction sites with industrial power plant installations will at all benefit the rare threecorner milkvetch. Desert disturbance, crushing, compression, and erosion will potentially allow increased deflation of sediments with strong winds, and removal of sand habitats for arenophilous plant species.

B7-85

The EIS goes on to contradict itself” “Wind-driven erosion would occur across the bare soils in all solar development areas where soils are exposed. MM Air Quality (AQ)-1, from Section 3.9: Air Quality and Climate Change, would require soil stabilization measures to minimize air quality impacts from windblown dust. Transport of windblown sediments would be adverse where it impacts air quality.” (*id.*)

B7-86

Chain-link fences are known to catch wind-blown sand and block sand transport corridors. Wind stabilization measures should be detailed and their impacts analyzed, as sand could be cut off to threecorner milkvetch populations on site and downwind of the project site.

B7-87

Invasive Weeds:

The DEIS says: “Sahara mustard has extremely high densities on the Project site, especially in sandier soils. It was found in the highest densities on the eastern portion of the Project site in development areas D and E. Sahara mustard is generally a better colonizer of sandy soils, which are also inhabited by threecorner milkvetch. Extrapolated densities of up to 1,370 individual Sahara mustard plants per acre (3,385 individuals per hectare) were identified in some areas. Estimated abundance is 54,602 Sahara mustard plants within the study area, with an estimated, average density of 80 Sahara mustard plants per acre (198 individuals per hectare).” (DEIS at 3-44).

This is an explosion of Sahara mustard waiting to happen, as the construction disturbance opens up newly disturbed ground. This is a dire impact to threecorner milkvetch. Simply applying herbicides to try to control these noxious weeds may result in elimination of native plants as well, including the milkvetches. Only avoidance of these areas will reduce impacts. BLM should analyze a Weed-Reduction Alternative that avoids the highest densities of Sahara

B7-88

B7-89

mustard and moves the project footprint away from rare plant and invasive weed populations in order to lessen disturbance of soils.

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B7-89

Mitigation Measures:

For Weeds the EIS states that:

MM VG-1: Requirements of the Site Restoration Plan and Integrated Weed Management Plan The Site Restoration Plan and Integrated Weed Management Plan shall include the following requirements, at a minimum:

Sensitive habitats, including high-density desert tortoise habitat and threecorner milkvetch habitat, shall be cleared (through biological and/or chemical control) of any non-native and noxious weed species that has or shall have seeds present, prior to ground disturbance.

What chemicals control would be used? The DEIS fails to talk about what herbicides would be used and how they would impact rare plants or other species like the tortoise.

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B7-90

Rare Plants:

Basin and Range Watch submitted a petition in 2019 to list the Threecorner milkvetch (*Astragalus triquetrus*) as federally endangered under the Endangered Species Act.

This taxon is threatened by invasive weeds, urban development and sprawl, OHV use, recreational use, increased fire frequency and intensity, energy development, surface water development, utility corridor maintenance and construction, livestock grazing, soil disturbance, and the inundation and fluctuating shoreline of Lake Mead (NPS 2010).

Threecorner milkvetch is a covered species under the Clark County Multi-Species Habitat Conservation Plan, where numerous threats are listed to plant species of the Mojave Desert Scrub Ecosystem. One of our primary reasons for emergency listing this species is that Clark County has done nothing to protect areas of Mojave Desert Scrub with rare plants from utility-scale solar energy projects in this part of the county on public lands, and a proliferation of solar development has happened without avoidance or mitigation to rare plants. In addition, trespass cattle on the closed California Wash Allotment continue unabated, as the Bureau of Land Management refuses to halt cattle freely roaming this part of Nevada, such as from the Bundy ranch.

1. Energy development

The Gemini Solar Project is proposed on land in Clark County, Nevada, managed by the Bureau of Land Management (BLM). It would be a 690-megawatt utility-scale photovoltaic project on Mojave Desert scrub that is excellent and little disturbed

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B7-91

habitat. The solar field, associated access roads, gen-tie lines, and a single pole site would permanently disturb 7,123 acres of high-quality desert. The area would be subject during construction to heavy equipment trampling and disturbing soils and desert surfaces here, with bulldozers, scraper-graders, trucks, and other heavy machinery. Unknown dust palliatives may be used for dust control. Water wells may be drilled, or water trucked in from outside. During operation of the power plant, regular truck traffic would drive over this area for panel washing, maintenance activities, potential mowing of vegetation and possible herbicide applications.

B7-91

Typical Power Purchase Agreements (PPAs) last 30 years, with decommissioning plans, but PPAs are subject to renewal or being sold and renegotiated. Decommissioning activities and mitigation measures such as seed collection or rare plants for future replanting are not well tested. Since the beginning of the push for large-scale solar development on public lands in California, Nevada, and Arizona, no utility-scale project has yet to be decommissioned and the restoration and recovery of Mojave Desert plant communities tracked and monitored. This is an unknown factor in solar development on native plant communities of the Southwest Deserts of the U.S.

Dry Lake Valley in Clark County NV has been partially converted into a 15,649-acre Solar Energy Zone (SEZ) under the Solar Programmatic Energy Environmental Impact Statement Record of Decision on land managed by the BLM.¹¹ Subsequent to this, three utility-scale photovoltaic projects have been constructed in the Dry Lake SEZ, resulting in grading and complete removal of 3,083 acres of Mojave Desert scrub.¹²

Question 6, increasing Nevada's Renewable Portfolio Standard (RPS) to 50% in 2010 could lead to a large build-out of utility-scale solar projects in Clark and Lincoln Counties on public lands desert ecosystems, such as in California Wash. This would lead to cumulative impacts above and beyond the proposed Gemini Solar Project.

B7-92

2. Utility transmission construction and maintenance

The proposed West-wide Energy Corridor designation is undergoing review and planning. Section 39-116 is a Designated Section 368 Energy Corridor¹³ that passes through the area west of Valley of Fire State Park, along I-15, and potentially on top of milkvetch populations. Future construction of large high-voltage transmission towers in this corridor would disturb soils and possibly allow more spread of invasive plants. New roads would be created for maintenance activities, potentially increasing OHV and recreational use and soil disturbance.

B7-93

¹¹ <http://solareis.anl.gov/sez/drylake/index.cfm>

¹² <https://www.doi.gov/pressreleases/interior-department-approves-first-solar-energy-zone-projects>

¹³ <http://corridoreis.anl.gov/regional-reviews/region-1/>

Section 368 of the Energy Policy Act of 2005 (the Act), Public Law 109-58 (H.R. 6), enacted August 8, 2005, directed the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to designate under their respective authorities **corridors on federal land in 11 Western States** (Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming) for **oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities** (energy corridors).

The Bureau of Land Management (BLM), U.S. Department of Energy (DOE), U.S. Forest Service (USFS), U.S. Department of Defense (DoD), and the U.S. Fish and Wildlife Service (USFWS) issued a Draft Programmatic Environmental Impact Statement (PEIS) on November 16, 2007 and a Final PEIS on November 20, 2008 that evaluated issues associated with the designation of energy corridors on federal lands in eleven Western states. The PEIS identified potential corridors, such as those in southern Nevada.

Based upon the information and analyses developed in the PEIS, the Secretaries of the Interior and Agriculture signed Records of Decision (RODs) in 2009 designating Section 368 energy corridors by amending land and resource management plans on lands administered by their respective agencies in the eleven Western states.

The designation of energy transport corridors in land and resource management plans identified the preferred locations for development of energy transport projects on lands administered by the USFS and BLM. These locations were selected to promote renewable energy development in the West, improve reliability, relieve congestion, and enhance the capability of the national grid to deliver electricity. But several corridors are of high concern and subject to litigation¹⁴.

The IOPs are intended to expedite the permitting process; provide coordinated, consistent interagency management procedures for permitting rights of way (ROWs) within the corridors; and identify mandatory requirements for future projects.

The evaluation of future project-related environmental impacts will await site-specific proposals and the required site-specific environmental review. A quantifiable and accurate evaluation of impacts at the local project level can be made only in response to an actual proposed energy project, when a proposal for an action with specific environmental consequences exists. Future proposed transmission lines within the 39-116 section may have significant impacts on threecorner milkvetch.

B7-94

3. Weedy plant invasions

Because of its habitat preferences, this taxon occurs in areas that may be invaded by sand-loving weed species such as Saharan mustard (*Brassica tournefortii*),

B7-95

¹⁴ *ibid.*

Mediterranean grass (*Schismus* spp.), salt cedar (*Tamarix ramosissima*), and Russian thistle (*Salsola tragus*). Saharan mustard is listed by the NDA on the *Nevada Noxious Weed List* as a Category B Weed, which are noxious weeds that are generally established in scattered populations in some counties of the State (NDA 2018a).

Saharan mustard, African mustard (*Strigosella African*), Mediterranean grass, Russian thistle, and Halogeton (*Halogeton glomeratus*) were found in California Wash during spring 2018 botanical surveys by Phoenix Biological Consulting.

Red brome (*Bromus madritensis* ssp. *rubens*), cheatgrass (*Bromus tectorum*), Mediterranean grass (*Schismus* sp.), and red stem stork's bill (*Erodium cicutarium*) were found to be widespread in California Wash during botanical surveys in spring 2018 (Phoenix Biological Consulting 2018).

Several other invasive weed species were recorded in California Wash by Phoenix Biological Consulting in spring 2018 during the botanical surveys including: Russian knapweed (*Acroptilon repens*), oat grass (*Avena* sp.), Chilean chess (*Bromus berterioanus*), ripgut brome (*Bromus diandrus*), Malta starthistle (*Centaurea melitensis*), Bermuda grass (*Cynodon dactylon*), foxtail barley (*Hordeum murinum* ssp. *glaucum*), Timothy grass (*Phleum pratense*), prickly sow thistle (*Sonchus asper*), and salt cedar (*Tamarix ramosissima*). Of these, Malta starthistle is a Category A Weed, defined as noxious weeds that are "generally not found or that are limited in distribution throughout the State;" Russian knapweed is a Category B Weed (defined above); and, salt cedar is a Category C Weeds, defined as noxious weeds that are generally established and generally widespread in many counties of the State (NDA 2018a).

4. Livestock grazing

Trespass cattle from the Bundy Ranch have been reported across this area. Bunkerville is in the midst of the range of the taxon, and an unknown number and distribution of trespass cattle trample the habitat of this forb.

Cattle grazing and trampling can significantly impact native annual forbs.

5. OHV use

Illegal off-road use can disturb soils and crush vegetation in the deserts.

6. Urban development

Clark County adopted a resolution that would ask Federal lawmakers to turn over 38,000 acres of federal lands managed by the Bureau of Land Management to private

B7-95

B7-96

B7-97

B7-98

ownership. Some of this proposed land transfer occurs on the southwest margin of the habitat for threecorner milkvetch. The land transfer would also bring development and urban sprawl to the border of the habitat for the species. New subdivisions and land clearing would spread of invasive weeds. Placing a new, large population of new residents on the margin of the habitat will encourage more use of adjacent public lands. This could result in increased use of adjacent public lands. That could encourage trampling of habitat, increased off-highway vehicle use and the spread of invasive weeds onto the habitat. The resolution¹⁵ is supported by the county and is now being considered by the Nevada Legislature and Federal Lawmakers.

B7-98

The recently proposed Clark County Lands Transfer Bill would potentially increase urban sprawl to the border of Lake Mead National Recreation Area at Boulder Basin. Records of threecorner milkvetch have been found in Boulder Basin at Sandy Cove within the National Recreation Area.

7. Increased recreation and visitor use to park units

Urban growth in Las Vegas and cities in Arizona could lead to increased visitor use of park units like Valley of Fire State Park and Lake Mead National Recreation Area. Illegal incursions of vehicles, trampling, tracking in invasive weeds, hiking and camping could increase in parks, with impacts to native forbs.

B7-99

8. Drought

Periods of drought can be an added stressor to populations that are already under disturbance regimes such as urban development, solar energy construction, livestock grazing, and illegal off-road activity which disturb or remove soil surfaces.

Fluctuations of the shoreline of Lake mead, from drought and urban water use, can submerge populations.

Climate change may exacerbate drought cycles and cause more extreme aridity in the Mojave Desert.

B7-100

Because of these cumulative threats to the milkvetch, only avoidance and the No Action Alternative will help keep this species from slipping closer to extinction.

B7-101

The DEIS has a seed-collecting mitigation measure, MM-VG-2: "The Applicant shall bond for the cost of seed collection and seed storage by an approved botanic garden. The bond shall be returned when these stipulations have been successfully completed." No successful seed-collecting and replanting attempt has been tested on these rare milkvetches, and no assurance

B7-102

¹⁵ <http://www.clarkcountynv.gov/airquality/announcements/Pages/Clark-County-Lands-Proposal.aspx>

is given that this will successfully limit population declines. Seed collection has failed to achieve germination results in many rare Mojave Desert plant species, and should not be used as a mitigation. Only avoidance of the plant populations can limit declines.

B7-102

Burrowing Owl:

A Burrowing Owl Mitigation Plan should not be deferred, but be prepared now before project approval.

B7-103

Desert Kit Fox:

A system should be in place to pay for a kit fox monitoring plan to make sure another outbreak of canine distemper will not happen, as occurred at Genesis Solar Energy Project in the California Desert.

B7-104

Desert Bighorn Sheep:

There is evidence of bighorn sheep using the California Wash area, and sign has been found. This indicates that the proposed solar project is indeed Desert bighorn sheep habitat, whether seasonal foraging habitat or connectivity habitat between the Muddy Mountains and the Sheep range. Developing the site will potentially remove connectivity habitat for the species, and BLM needs to analyze this.

B7-105

The DEIS has almost no information on the desert bighorn sheep in the region. The biology surveys found bighorn sheep sign, a partial horn, on Site A or the Northeast corner of the project site. That is one of the few references to bighorn sheep and it is incomplete.

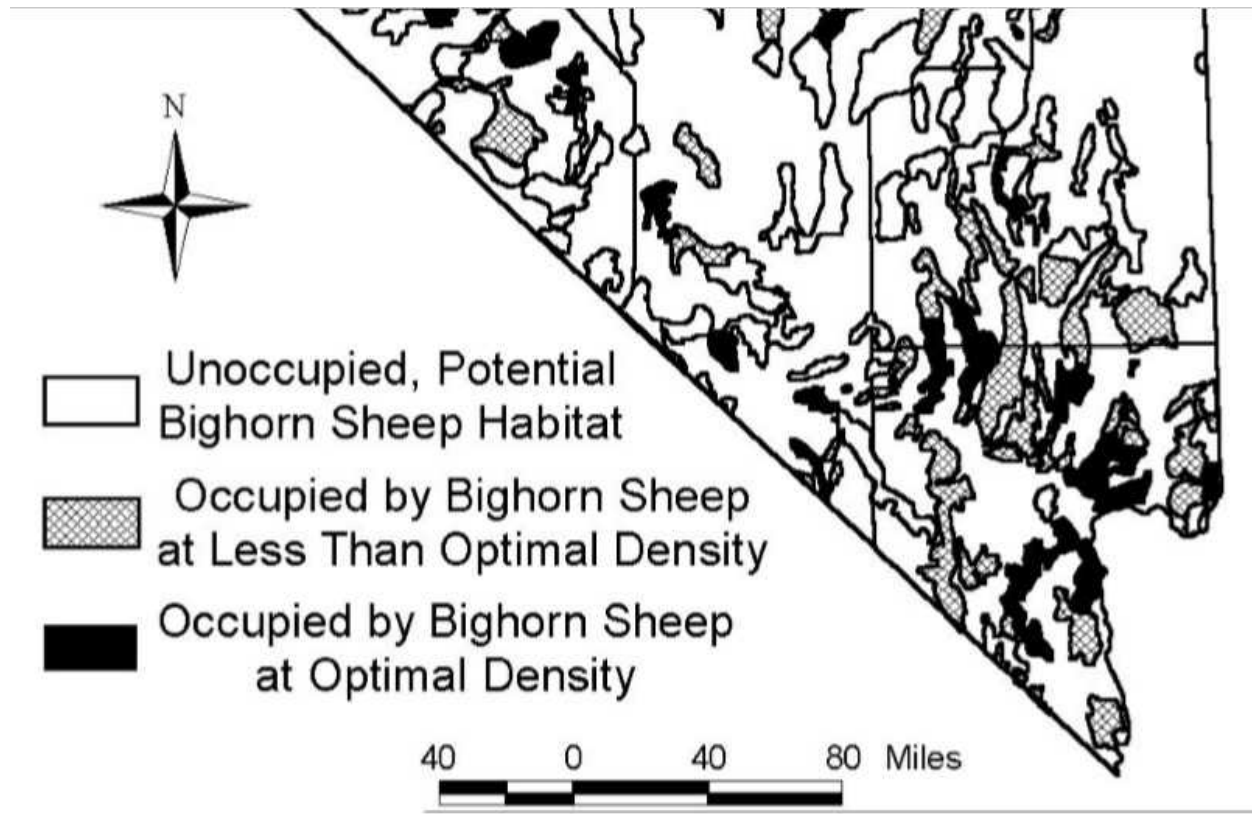
Basin and Range Watch submitted scoping comments on bighorn sheep and they can be referenced here: [https://eplanning.blm.gov/epl-front-office/projects/nepa/100498/160129/195775/Gemini Final Scoping Report & Appendices 508.pdf](https://eplanning.blm.gov/epl-front-office/projects/nepa/100498/160129/195775/Gemini_Final_Scoping_Report_&_Appendices_508.pdf)

In particular, BLM did not respond to the following comment: *“Desert bighorn sheep have been well documented within the Muddy Mountains. Including the wilderness area and surrounding non-wilderness lands, the population is estimated to be approximately 265, with a potential population estimate of 505 based on forage supply (Rangewide Plan for Managing Habitat of Desert Bighorn Sheep on Public Lands). Two wildlife guzzlers were constructed within the wilderness to convert the area from cool season to year-long habitat. Desert bighorns are a state protected species and considered a watch species under the Clark County MSHCP. Desert bighorn sheep are associated with rugged terrain including canyons, steep slopes, cliffs, and mountain tops. In the Muddy Mountains, desert bighorns could be described as nomadic;*

B7-106

remaining mobile throughout their range to take advantage of variable rainfall patterns and available water sources (many of which are ephemeral). NDOW biologists have observed that desert bighorns usually limit summer activity to an area within two miles of water, although some summer movements can be greater.”

B7-106



^Optimal density bighorn sheep habitat map from the Nevada Department of Wildlife

Fencing off the project even for a mowing alternative will cut off linkage and remove foraging habitat for sheep on the bajada of the Muddy Mountains and Gemini Solar would be 11 square miles. BLM must do a better job reviewing this subject in a Supplemental EIS.

B7-107

The Muddy Mountains are a popular bighorn sheep hunting area. A supplemental EIS should review the potential impacts to access and recreational hunting for desert bighorn sheep caused by Gemini Solar. Hunting guides do take people into the Muddy Mountains for bighorn sheep hunts: <https://www.gandjoutdoors.com/bighorn-sheep-hunts/>

B7-108

Bats :

Conservation groups specifically asked BLM how the project would impact bats in the scoping comments and there is no response. The BLM should calculate the loss of habitat for insects that bats feed on. There should be a volume of lost food items for the species. The DEIS should list each of the 15 species found and the potential impacts to each one.

B7-109

Desert Tortoise:

The Mojave Population of the Agassiz's desert tortoise was listed as Threatened by the US Fish and Wildlife Service (USFWS) in 1990 followed by the designation of critical habitat in 1994. In 2000, the USFWS began systematically surveying tortoise populations in critical habitat and recovery unit areas to determine population trends. Based on their findings (USFWS 2015), which are briefly summarized in the chart, the Desert Tortoise Council is convinced that the Mojave Population of the Agassiz's desert tortoise, which includes tortoises that would be affected by passage of this Act, should be federally listed as Endangered rather than Threatened (Edward LaRue, Desert Tortoise Council, 2018, Letter RE: Opposition to Senator Mike Lee's "Desert Tortoise Habitat Conservation Plan Expansion Act" [S. 3297] to Senator Lisa Murkowski, Chair of Committee on Energy and Natural Resources, dated 12 August 2018).

Recovery Unit: Designated Critical Habitat Unit/Tortoise Conservation Area	Surveyed area (km ²)	% of total habitat area in Recovery Unit & CHU/TCA	2014 density/km ² (SE)	% 10-year change (2004–2014)
Western Mojave, CA	6,294	24.51	2.8 (1.0)	–50.7 decline
Fremont-Kramer	2,347	9.14	2.6 (1.0)	–50.6 decline
Ord-Rodman	852	3.32	3.6 (1.4)	–56.5 decline
Superior-Cronese	3,094	12.05	2.4 (0.9)	–61.5 decline
Colorado Desert, CA	11,663	45.42	4.0 (1.4)	–36.25 decline
Chocolate Mtn AGR, CA	713	2.78	7.2 (2.8)	–29.77 decline
Chuckwalla, CA	2,818	10.97	3.3 (1.3)	–37.43 decline
Chemehuevi, CA	3,763	14.65	2.8 (1.1)	–64.70 decline
Fenner, CA	1,782	6.94	4.8 (1.9)	–52.86 decline
Joshua Tree, CA	1,152	4.49	3.7 (1.5)	+178.62 increase
Pinto Mtn, CA	508	1.98	2.4 (1.0)	–60.30 decline
Piute Valley, NV	927	3.61	5.3 (2.1)	+162.36 increase
Northeastern Mojave	4,160	16.2	4.5 (1.9)	+325.62 increase
Beaver Dam Slope, NV, UT, AZ	750	2.92	6.2 (2.4)	+370.33 increase
Coyote Spring, NV	960	3.74	4.0 (1.6)	+ 265.06 increase
Gold Butte, NV & AZ	1,607	6.26	2.7 (1.0)	+ 384.37 increase
Mormon Mesa, NV	844	3.29	6.4 (2.5)	+ 217.80 increase
Eastern Mojave, NV & CA	3,446	13.42	1.9 (0.7)	–67.26 decline
El Dorado Valley, NV	999	3.89	1.5 (0.6)	–61.14 decline
Ivanpah, CA	2,447	9.53	2.3 (0.9)	–56.05 decline
<i>Upper Virgin River</i>	<i>115</i>	<i>0.45</i>	<i>15.3 (6.0)</i>	<i>–26.57 decline</i>
<i>Red Cliffs Desert</i>	<i>115</i>	<i>0.45</i>	<i>15.3 (6.0)</i>	<i>–26.57 decline</i>
Range-wide Area of CHUs - TCAs/Range-wide Change in Population Status	25,678	100.00		–32.18 decline

Summarizing the results of these surveys (USFWS 2015), 17 populations of Mojave desert tortoise are described below that occur in Critical Habitat Units (CHUs) and Tortoise Conservation Areas (TCAs), including 14 that are on lands managed by the Bureau of Land Management.

The table includes the area of each Recovery Unit and CHU/TCA, percent of total habitat for each Recovery Unit and CHU/TCA, density (number of breeding adults/km² and standard errors

= SE), and the percent change in population density between 2004 and 2014. Populations below the viable level of 3.9 breeding individuals/km² (10 breeding individuals per mi²) (assumes a 1:1 sex ratio) and showing a decline from 2004 to 2014 are in red.

You can see from the results of USFWS surveys in the table that (a) 10 of 17 populations of the Mojave desert tortoise declined from 2004 to 2014; (b) 11 of 17 populations of the Mojave desert tortoise are no longer viable; and (c) these 11 populations represent 89.7 percent of the range-wide habitat in CHUs/TCAs, which encompass the best remaining tortoise habitats and populations.

Removing over 200 adult tortoises and potentially as many as 900 juvenile tortoises will negatively impact the tortoise both locally and cumulatively for the species. Mortality from translocation has been high in past large-scale projects, and habitat removal will also reduce population viability in the area.

In addition, the project will block genetic connectivity between Recovery Units as was detailed in our scoping letter. We continue to advocate for the No Action Alternative in order to conserve the Mojave desert tortoise and prevent it from becoming an endangered species on the way to extinction in the wild.

This would be the largest solar project to date built on desert tortoise habitat. The All Mowing and Hybrid Alternative present what is being called a potential mitigation for this impact. The BLM can no longer use off-site compensatory mitigation due to a recent order by the Trump Administration. It appears that vegetation mowing in the BLM's Preferred Hybrid Alternative is intended to make up for this.

The surveys conducted by Phoenix Biological Consulting estimate that 215 adult tortoises would be displaced by Gemini Solar and over 900 juveniles would be impacted. That is the largest number of tortoises that would be impacted by a large-scale solar project to date.

During protocol surveys, 18.7 tortoises/square mile (7.2/square km) were found on the Gemini Solar Project site by Phoenix Biological Consulting in 2017 (Phoenix Biological Consulting, 2018. Desert Tortoise Survey Report (Areas A-E), Gemini Solar Project N-84631. Prepared for Arevia Power & Solar Partners XI, LLC (a wholly owned subsidiary of Valley of Fire, LLC). Prepared by Phoenix Biological Consulting. January 30, 2018)

This is an extremely high density of tortoises, and should warrant an immediate halt to the project, as this is a very high-value desert tortoise area.

For the Ivanpah Solar Electric Generating System in San Bernardino County, California, a similar density of tortoises was actually found and removed from the solar project, and this caused a controversy, resulting in U.S. Fish and Wildlife Service re-initiating consultation on Take under section 7 of the Endangered Species Act.

B7-110

B7-111

B7-112

At the Ivanpah project, 35 tortoises were cleared (found and/or dug out of their burrows) from Unit 1 and Construction Logistics Area in 2010 (only 6 showed themselves in this area during all the 2007 and 2008 presence/absence surveys; 28 total for whole project). In 2010 the 35 tortoises included 20 adults and 15 juveniles. This works out to 10.8 adult tortoises/square km. The average density for the Northeastern Mojave Recovery Unit is 1.7 tortoises/square km. Ivanpah Valley was a prime and dense tortoise population.

That Phoenix Biological Consulting found 7.2 tortoises/square km should necessitate a halt to the project and consideration of conserving this tortoise habitat as an Area of Critical Environmental Concern due to its very high tortoise density.

B7-113

The proposed action would clear 7,100 acres of habitat through traditional disc and roll clearing. Tortoises would be excavated from burrows and either relocated or translocated away from the project. A recent study by the Smithsonian has determined that translocated male desert tortoises are not reproducing.¹⁶

B7-114

Had the BLM directed this development on lower density areas in the project application, the impacts to desert tortoise would be less. The surveys conducted by Phoenix Biological Consulting determined that area F had fewer desert tortoises. Yet BLM will not review any reduced footprint alternatives.

The proposed action will create countless raven perches on panels. Fences, transmission lines and new buildings.

B7-115

As we pointed out in our scoping comments, the cumulative scenario of tortoise impacts in the region is very big. Close to 17,000 acres of other large-scale solar has either been built or proposed to be built and Clark County wants an additional 40,000 acres of public land turned over to developers, most of that being desert tortoise habitat.

B7-116

According to the Fish and Wildlife Service, the Northeast Recovery Unit for the tortoise is doing well in terms of overall tortoise numbers. Most of the desert tortoise recovery units have seen a big decline in numbers, but the Coyote Springs, Mormon Mesa and Gold Butte Critical Habitat numbers are doing well.

¹⁶ <https://insider.si.edu/2017/05/smithsonian-study-shows-relocated-desert-tortoises-reproduce-lower-rate/>

Change in abundance of adult Mojave desert in each recovery unit (in and out of TCAs)

Recovery Unit	Modeled Habitat (sqkm)	2004 Abundance	2014 Abundance	Change
Western Mojave	23,139	131,540	64,871	-66,668
Colorado Desert	18,024	103,675	66,097	-37,578
Northeastern Mojave	10,664	12,610	46,701	34,091
Eastern Mojave	16,061	75,342	24,664	-50,679
Upper Virgin River	613	13,226	10,010	-3,216
Total	68,502	336,393	212,343	-124,050



Habitat area based on Nussear et al. 2009

Tortoise abundance from Allison and McLuckie 2018

Several factors are responsible for the reduced numbers of the tortoise. Urbanization, climate change, habitat fragmentation, overgrazing, off road vehicle use and disease are among the reasons. If indeed the California Wash population is doing well, that why would BLM want to compromise that? It could end up being one of the last strong-holds for the species. If it isn't broke, don't fix it.

Livestock grazing, for example, impacts desert tortoises in numerous ways, including trampling of habitat which can lead to burrow collapse and habitat disturbance. Cattle eat the same plants tortoises eat as herbivores. The DEIS at 3-8 says: "One open but inactive grazing allotment (Muddy River) and two closed grazing allotments (White Basin and Arrow Canyon) are located between approximately 3.8 to 12.5 miles (6.1 to 20.1 kilometers) from the Project site." As part of conservation measures to conserve the desert tortoise and put it on a path to recovery, BLM, U.S. Fish and Wildlife Service, conservation groups, and Clark County agreed to work towards maximizing habitat preservation and restoration in order to halt the declines of desert tortoise populations from threats. Part of these measures were to close grazing allotments that harmed desert tortoises. This region is part of that connectivity corridor that links tortoise genetic populations and Recovery Units. BLM should consider that grazing harmed

↓ B7-117

tortoises in this area, and took action to protect tortoises. Now BLM is considering a large-scale solar project that would equally impact tortoises and disturb vital habitat in this connectivity corridor—a No Action Alternative is warranted.

B7-117

Alternative for Gen-Tie Line:

According to the DEIS, the desert tortoise density for gen-tie routes is 25.4 per square mile. That is a very high density. A supplemental EIS should consider an alternate location for the gen-tie lines. Construction of new roads, lay down areas, lattice towers and monopoles could cause direct impact and new gen-tie lines would provide perches for ravens.

B7-118

Vegetation mowing:

The DEIS states: “The purpose of mowing under this alternative is to maintain vegetation and soils within the solar facility so that the desert tortoises would have the opportunity to return to the site once construction is completed (recognizing that the habitat on the Project site would be substantially altered). Desert tortoises would need to be moved or translocated from the Project site during construction. The process would include installing desert tortoise fencing around the development area being constructed, conducting health assessments on the desert tortoises found, and translocating the tortoises outside of the fenced construction areas so that facility construction could occur without the risk of injuring or killing them. “

The heavy-duty mulchers that would be used weigh over 20,000 pounds. As every desert tortoise biologist is aware, finding the juvenile and hatchling tortoises is quite difficult. Many are missed and with an estimate 900 juveniles that would be impacted by the project, there could be significant mortality. It should also be noted that these machines will crush, kill and shred every other living creature in their path. Vehicles would be allowed to enter the site for the next 30 years to conduct various maintenance activities including vegetation trimming and panel washing. With the difficulty of finding juveniles, this creates a big potential hazard for the tortoise. The BLM wants to allow a Threatened species to re-enter an industrialized energy zone. This is a first and is quite irresponsible.

B7-119

The mowing alternatives would allow desert tortoises to live on the site among solar panels, but will also create a limitless amount of perches for ravens. Solar panels, fences, buildings, battery storage – anything new is an opportunity for subsidized predators.

The Hybrid Alternative and the All Mowing Alternative would use heavy duty mulchers to both run over every square foot of the project site and masticate any living thing in its path. The BLM has selected the hybrid alternative as the preferred alternative. The BLM is attempting to convince the public that this is the more green alternative and there are advantages to this, but the plan has not been very well thought out. Gemini Solar is owned by Arevia and the owners of Gemini have ties to the Pahrump Solar Project built by Bombard Associates. The Pahrump Solar Project is an 80-acre photovoltaic facility and used vegetation grubbing and has a Habitat

B7-120

Conservation Plan. Gemini is being modeled after this project. One should recognize that Gemini would be roughly 100 times larger than the Pahrump Solar Project.

Four desert tortoises were found on the project site. Small doors were installed in the parameter fence so tortoises can re-enter. While all 4 tortoises did return to the site, just about all of the new annual vegetation that returned is not native. Red brome, split grass, erodium and Russian thistle are all abundant on the site. These are also less nutritious for desert tortoises. While the Gemini Solar developers claim that the Pahrump Solar Project is successful, it really has only been complete for under 3 years. The desert tortoise is a long-lived species and 3 years do not determine success in this case.

B7-120

At the public meeting, one of the developers was telling the public that tortoises would benefit from the shade from solar panels. Shade will be an impact and tortoises never needed our help in this department. Tortoises are great burrowers and they already have the shade issue figured out. Impacts from too much shade will be:

1. Desert tortoises need sun when coming out of hibernation and when basking in the fall. Warming up is part of thermoregulation. Solar panels will block much of the sun and degrade the habitat.
2. Many of the plants that are food for the tortoise will be blocked from sunlight in the spring and fall.
3. Providing large shady areas will also create opportunities for predators that seek out tortoises.

B7-121



^Many invasive weeds were the first plants to return on the Pahrump Solar Project.

Mowing vegetation with 20,000-pound vehicles will completely crush all soil crust and destroy many delicate roots under the ground. This will slow down and inhibit plant growth including food plants for the desert tortoise.

Allowing plants to only grow up to 24 inches will also inhibit extensive root growth of plants and cause erosion which will bring in more invasive species. This would also inhibit natural shade. Since the panels would be 15 feet off the ground for mowing alternatives, it seems ridiculous to only allow the vegetation to grow 24 inches.

The heavy-duty mulchers are very noisy. And are essentially bigger versions of off highway vehicles driving over desert ecosystems.

The USGS published a report called Effects of off-road vehicles on vertebrates in the California desert (Bury et al. 1977).

From the report:

Off-road vehicle (ORV) use provides a form of outdoor recreation that is increasingly popular. The purpose of this study was to examine the impact of these machines on

B7-122

B7-123

creosote shrub habitat and associated wildlife in the western California Desert. Comparisons at eight paired sites (Control and ORV use) demonstrate that ORV-use areas have significantly fewer species of vertebrates, greatly reduced abundance of individuals, and noticeably lower reptile and small mammal biomass. Diversity, density, and biomass of reptiles and small mammals are inversely related to the level of ORV usage. The number of individuals found in heavily used and pit areas was 55% and 20%, respectively, of that present in undisturbed sites. Biomass estimates were even lower (23% and 17%, respectively). Censuses at three localities also showed decreased diversity, density, and biomass estimates of breeding birds in DRV-used areas. Present evidence indicates that off-road vehicles have a negative effect on desert wildlife over large areas. This widespread impact must be recognized to manage and conserve resources in DRV-use areas."

B7-123

The tortoises will be kept in holding pens for up to one year before being released back on the site. This is to allow vegetation to regrow. Vegetation grows quite slow in the Mojave Desert so one year will not produce much growth. The EIS says they would be kept at the Great Basin Institute in Las Vegas, but the BLM told us it would be at the old Desert Tortoise Conservation Center off Blue Diamond Road. Captive tortoises have contracted the Upper Respiratory Tract Disease (URTD) in crowded conditions. Although this would be monitored, detection of both *Mycoplasma agassizii* and *Mycoplasma testudineum* can be difficult to detect. A study published in The Veterinary Journal (Jacobson et al. 2014) found:

B7-124

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B7-126

...most mycoplasmas, even within an individual animal with a defined isolate, exhibit extensive intraspecies genotypic and phenotypic variability that is manifested as antigenic variation (Simmons and Dybvig, 2007). The ability to vary their antigenic patterns not only allows mycoplasmas to evade immune surveillance, but also to confound analysis of mycoplasmal immunogen recognition when only a single isolate is used as the source of antigen, especially on Western blot analysis (Kittelberger et al., 2006). The need for multiple strains in Western blot analysis, but not in ELISA, are consistent with findings for other mycoplasmal species (Tola et al, 1996, Kittelberger et al, 2006).

Releasing so many tortoises back onto a developed site could possibly spread disease to resident populations. And allowing resident tortoises to enter the project as well as allowing translocated tortoises back out of the site has the potential to spread disease to wild populations.

B7-127

Avian-Solar Issues/Lake Effect:

Conservation groups submitted comments on this subject and these can be referred to in the Gemini Scoping Report. Basin and Range Watch also submitted attachments on the subject from the Multi-Agency Solar Avian Working Group. The BLM responded to almost none of these comments.

B7-128

We believe the BLM needs to examine this issue in greater detail. We would like to see more of this information reviewed in a Supplemental EIS.

B7-128

We would like BLM to respond to this comment we submitted for scoping:

“There are updated numbers that confirm there are significant numbers of bird mortalities found at solar projects. Photovoltaic project companies are turning in many of these numbers. Since the projects are very large, these numbers only likely represent a smaller percentage of what is actually taking place. Updated information about avian-solar interactions by US Fish and Wildlife Service shows this is a concern. Solar projects can have significant impacts to sensitive species, and those listed under the federal Endangered Species Act. Data reported and gathered from seven solar projects in the southern California desert and arid grassland habitats from 2012 through April 2016 show that 183 bird species have been killed at solar projects, a number that rises with new information. 3,545 individual birds were reported dead at solar projects, from a mix of incidental finds and systematic surveys (Dietsch 2016). This is likely an underestimate.”

B7-129

The project will be built in a location that is within several potential local avian flyways. There is quite a bit of water in the region. Birds do use Lake Mead, Colorado River, the Muddy River, the Virgin River, the Pahrnagat National Wildlife Refuge, the Las Vegas Wetlands Park, Coyote Springs Valley and the Desert National Wildlife Refuge.

B7-130

Specifically, the threats to these species from solar panels was not discussed –

B7-131

- Federal Endangered/Threatened – Yuma Ridgeway’s (Clapper), Willow flycatcher, and Yellow-billed cuckoo.

- Birds of Conservation Concern – Eared grebe, American white pelican, Burrowing owl, Calliope hummingbird, Bald Eagle, Ferruginous Hawk, Golden Eagle, Peregrine Falcon, Snowy Plover, Long-billed Curlew, Black Swift, Calliope Hummingbird, Lewis's Woodpecker, Willow Flycatcher, Loggerhead Shrike, Virginia's Warbler, and Sage Sparrow.

B7-132

There should be a complete list of potential birds that may collide with solar panels.

The DEIS does not say what photovoltaic technology would be used. Thin-film panels are very reflective and the projects that have used these. A more complete EIS would talk about this technology. It would be easier to determine what the impacts would be if we knew what photovoltaic technology was uses.

B7-133

The mitigation plan (*MM-Wild-7*) does not say how long monitoring would occur and does not outline the specific avian monitoring plan. There are no maps or schedules relating to how frequent the monitoring would be. There should be a map of the project configuration with the monitoring strategy and schedule.

B7-134

There is also no information on mitigation attempts to make the project less hazardous for birds. The Pahrump Solar Project spaced solar panels further way from one another in an

attempt to break up this lake effect. They also created a wavy surface in an attempt to break up the effect.

↑ B7-134



^Wavy solar panels on the Pahrump Solar Project

Solar panel textures could also be changed to reduce polarized glare and lake-like colors. This should also be in the Mitigation Measures.

Panels can be tinted Earth tone colors as this article talks about: Colored Solar Panels Address Concerns of Aesthetics, Historic Preservation - <https://www.solarreviews.com/news/colored-solar-panels-address-concerns-of-aesthetics-historic-preservation/>

B7-135

Amy Fesnock of BLM gave a very interesting talk on her [background avian mortality study](#). BLM decided to piggy-back avian mortality surveys onto desert tortoise line distance sampling, which has a long history of annually counting tortoises for recovery estimates, across the desert in a rigorous scientific fashion.

Surveyors were trained to find carcasses placed out in the desert, and 97% of detections were within 10 meters of the line. So 10 meters was used as the effective sampling width.

Carcasses were placed out on desert sites to see how long they lasted. USGS Mathematician Manuela Husto applied statistical sampling techniques to the data and applied detection curves for large, medium, and small birds, and was able to estimate when carcasses would no longer be observable.

B7-136

453 transects were walked by biologists from March to May in 2015, in the Fremont-Kramer Area of Critical Environmental Concern (ACEC), Superior-Cronese ACEC, Ord-Rodman ACEC, Joshua Tree National Park, the Pinto Mountains, Chuckwalla ACEC, and Chocolate Mountains. So these surveys covered a huge swath of the California Desert with intensive surveys walking the ground searching the ground. Surveyors covered 37 square miles of relatively natural desert.

In all this survey effort, only 6 avian mortalities were found: one adult red-tailed hawk, apparently killed by a great-horned owl as it lay below an owl nest; one juvenile red-tailed hawk; one rock wren that was apparently predated by a loggerhead shrike, as it was preserved on a shrike perch impaled on a cactus; and three feather spots of unknown species.

This is far less than the avian mortality rate on solar projects. Some solar companies have implied that their bird mortality rate is not much greater than the natural background mortality rate in the desert, as before a project broke ground. But Fesnock's study refutes this strongly.

The desert background mortality rate determined from line distance sampling in 2015 was 0.024 birds/acre/year. This could be broken down further to 0.004 large birds/acre/year, 0.0026 medium-sized birds/acre/year, and 0.0214 small birds/acre/year.

But on three unnamed solar projects, Fesnock explained that the avian mortality rate increased to 1.7 birds/acre/year, 0.4 birds/acre/year, and 0.6 birds/acre/year.

Fesnock concluded, "When compared to mortality rates from solar projects, background mortality does not appear to be a significant factor and could easily be accounted in the sampling design error rates."

The BLM should also request that the applicant creates a Habitat Conservation Plan with the Fish and Wildlife Service for Threatened and Endangered Species including avian species and the desert tortoise. HCPs are *planning* documents required as part of an application for an incidental take permit. They describe the anticipated effects of the proposed taking; how those impacts will be minimized, or mitigated; and how the HCP is to be funded.

BLM provided absolutely no analysis for how avian mortality at this very large-scale photovoltaic project would be mitigated. Only one mitigation measure is proposed in the DEIS:

MM WILD-7: Bird and Bat Conservation Strategy Requirements

The Bird and Bat Conservation Strategy shall include a robust systematic monitoring and adaptive management plan to assist in avoiding and minimizing Project impacts on migratory birds. The monitoring shall include overall annual mortality, species composition, and spatial differentiation based on established searcher efficiency and carcass persistence trials, being established through other studies at solar facilities, at the site and shall be designed to account for seasonal differences and fatality events of rare species.

B7-136

B7-137

B7-138

Not only is this Bird and Bat Conservation Plan deferred until after approval and public review, it is also very slim on details. Monitoring should be made public in monthly reports, and independent scientific reviewers used to monitor solar fields.

B7-138

Both the Desert Sunlight and Genesis Project in California have reported a diversity of birds that have become avian mortalities and many of the birds were detected to have collision injuries.

B7-139

While we believe that the biologists hired to survey these projects are highly qualified individuals, we question the accuracy of the reporting because we have been told some biologists have lost jobs over reporting information. Interestingly, this was backed up at the last Desert Tortoise Council Symposium in 2016. Kathryn Simon of Ironwood Consulting told everybody that the politics of management from the solar companies often get in the way of accurate reporting. In the Symposium Abstracts, she reported “the political backing that supports energy development in the western part of the country has also resulted in the neglect or abuse of natural resources. While a great deal of effort is placed on properly siting and permitting a project, little or no oversight happens once the project enters construction and continues into operations and maintenance. This has led to a “power vacuum,” often filled by the project proponent's "environmental" staff who often ensure the least amount of information leaves the project and is reported to wildlife agencies and the public. Specific examples of such behavior are provided and suggestions made for biologists on the ground in achieving their goals of proper monitoring oversight.”

B7-140

These Gemini solar fields will look like lakes as they reflect blue sky, and with a lack of working mitigation measures, the No Action Alternative is the only good alternative to prevent avian mortality.

B7-141

The Desert National Wildlife Refuge (NWR) is the largest refuge outside of Alaska. The Desert NWR is managed as part of the Desert National Wildlife Refuge Complex comprised of four refuges: Desert NWR, Moapa Valley NWR, Pahrangat NWR, and Ash Meadows NWR.



The Desert NWR encompasses six major mountain ranges and seven distinct life zones. The refuge website boasts 320 species of birds. To find out more, the avian enthusiast (birder) checks eBird (Cornell University <https://ebird.org/hotspots>)¹⁷ and discovers a Hotspot red balloon at the refuge's Corn Springs Field Station showing 297 species. Pulling back to a wider area the birder will find that **the Gemini Project site is surrounded by birding Hotspots** (see eBird map below). Closer investigation shows that this area of the Mojave Desert is rich with mountains and drainages which provide springs, ponds, and rivers such as the Muddy and Virgin Rivers that drain into Lake Mead. Also draining into Lake Mead from urban Las Vegas is the miles long Clark County Wetlands Park with 254 species. (See #3 in the map below - bold added)

B7-142



The Gemini Project DEIS does not mention, much less evaluate, these rich watered habitats surrounding the Project. The DEIS bird surveys recorded 61 species. Discussion is confined to nesting species. Golden Eagle surveys were also done. However, Migratory bird species, protected under the Migratory Bird Treaty Act, may travel long distances in their yearly round-trips along the Pacific Flyway between over-wintering and nesting sites. During their journeys

B7-143

¹⁷ eBird is a world-wide citizen science data site known for its accuracy and timeliness. <https://ebird.org/science/using-ebird-for-science> (accessed 8/2/2019)

they require places to rest and feed while avoiding predators. Birds fly, frequently high (miles) overhead, and the 25 to 50-mile buffer around the Project is inadequate to account for their needs, behavior, and visual range as they actively search for and spy out places to land with promising resources. The desert can be a particularly difficult area to traverse because of the heat. The song birds mainly travel at night and seek shaded refuge during the day. Waterbirds and shorebirds move from wetland to wetland. The DEIS is blind to these behaviors and needs.

B7-143

“Of the 61 species found, many were identified during migration and would not be expected to occur on the Project site during the breeding season.”¹⁸ (bold added) What happened to flying over the Project Site? The 10 observed nesting and the 10 potential nesters are desert species commonly with altitudinal rather than long distance migration patterns. For comparison, Pahrnagat NWR records 77 known nesting species.¹⁹ These species are also recorded nesting in the Complex refuges and surrounding eBird Hotspots. Nesting is only one segment of a bird’s yearly life cycle. Monitoring the cycle is essential to successful management.

B7-144

The “Lake Effect”

When operational the 11 square miles Project will cover much of the length and most of its width of California Wash. The panels, whatever their type and anti-reflective covering, will look different than the surrounding tan desert – could be mistaken for a lake or even a parking lot (both attract birds) - promising but not delivering a safe landing. Photovoltaic panels are stowed flat at night so, depending on the phases of the moon and starlight, the nocturnal fliers could be in jeopardy.

B7-145

Table 3.0-2 lists the Cumulative Projects in the Project Area. There are 15 solar energy projects ranging in size from Nellis Air Force Base on 140 acres (0.22 sqmi) to Yellow Pine Solar Project on 9,280 acres (14.6 sqmi). When operational, and until scientifically evaluated with published data to the contrary, all can be assumed to have a “lake effect” – avian mortality along the east Mojave Desert portion of the Pacific Flyway could skyrocket.

B7-146



The photo above shows the Cascade Solar Project, Joshua Tree, CA. This Project is 150 acres or 0.25 sqmi. The panels are reported to have an anti-reflective coating.

Waterbirds are vulnerable because they need to take off from water which is not available so they are panel bound. Shorebirds need the shallow edge, also not available.

This “Lake Effect” phenomenon, regardless of the number of dead birds reported found within pv and thermal solar sites, is drowning in carcasses and opinions but not scientific study. The agencies could, but do not, make a prudent decision to require that panel surfaces be patterned to destroy the smooth appearance of water. The “lake effect” is not studied or even mentioned in the Project’s Glint and Glare Report 2019.

Mitigation Measure WILD-7 is required for all Project Alternatives except the No Action Alternative. “*The BBCS (Bird and Bat Conservation Strategy) would include a robust systematic monitoring and adaptive mangement plan for the Project to assist in avoiding and minimizing impacts on migratory birds, per MM WILD-7.*”²⁰ The Project is 11 sqmi and more than a qualified biologist should be required to realize the BBCS. To lift it above ‘just words’ this strategy must be transparent and include a robust plan that encompasses the 11 square miles Project area and surrounding footprint. The Plan should be developed independently of the developer with bonded funds to see it through for the 30 year life of the project. The bond should include funds for a BLM monitor to oversee all phases of data collection, analysis, and adaptive management.

Ridgway's rail (*Rallus obsoletus*)²¹ formerly known as the Yuma clapper rail has most populations considered threatened or endangered. Its habitat consists of salt marshes along the Californias coast, and brackish and freshwater marshes inland. The "Yuma" clapper rail inhabits freshwater marsh along the lower Colorado River and nearby areas.

A Ridgway’s Rail was been found dead at a solar facility in Riverside County.²² Will this be a problem in Clark County?

eBird Hotspots data shown below demonstrates that this Rail moves around and could be victimized by the solar array.

Below left, the Overton WMA is 20 miles east of the Project; below right, 33 Hole Overlook is 27 miles SE on the Muddy River.

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²⁰ DEIS Vol. 1 Page 3-78

²¹ <https://www.audubon.org/field-guide/bird/ridgways-rail>

²² <https://www.kcet.org/redefine/endangered-bird-found-dead-at-desert-solar-power-facility>



Ash Meadows National Wildlife Refuge (NWR) is located 79 miles NW of the Project.

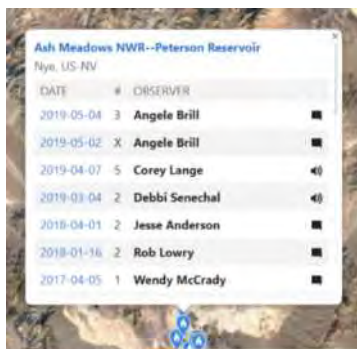
eBird reports:

16 waterfowl species for Moapa Valley NWR – 41 checklists

23 waterfowl species for Pahrangat NWR – 225 checklists

24 waterfowl species for Desert NWR – 3,397 checklists

Obviously, the Desert NWR is the most visited with the most reports, but the three species lists overlap as expected.



eBird Migratory Bird sightings within the Project 25 Mile Buffer.



This map, minus the inserted labels, can be found at <https://ebird.org/hotspots>. Enter the name of any of these hotspots to get the map. The bottom corner of each label, either left or right side, touches the hot spot described. The site was accessed 8/31/19.

1. Desert National Wildlife Refuge - Corn Creek (Field Station) 297 species
2. Las Vegas - Floyd Lamb Park at Tule Springs 287 species
3. Las Vegas Urban - Clark County Wetlands Park 254 species
4. Henderson Bird Viewing Preserve 298 species
5. Overton Wildlife Management Area 247 species
6. Lytle Ranch Preserve 273 species

Biological Soil Crust

We found biological soil crusts on the Gemini proposed project site on desert soils. What are the impacts of destroying these carbon-absorbing living soil communities? These will be driven over and crushed, disturbed by construction and maintenance.

Soil biological crust is a mix of organisms that occupy and protect the surface of the soil in most desert ecosystems. The organisms often include filamentous and non-filamentous cyanobacteria, mosses, lichens, liverworts and fungi.

Damage to intact desert soils with biotic crusts and the resulting increased siltation during flooding and dust are not adequately analyzed in the DEIS. Biological crusts protect the soil and hold weeds at bay.

Driving over and disturbing 7,000 acres of desert will be highly destructive to sensitive biological soil crusts, as well as rare plants, and fossorial animal species such as kangaroo rats, pocket mice, burrowing owls, kit foxes, rattlesnakes, tarantulas, and desert tortoises. This is one of the more significant negative impacts of the project, and why we support a Distributed Generation Solar Alternative utilizing rooftop solar and parking lot solar structures, in order to avoid this needless ground disturbance of the Mojave Desert.

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Air Quality/Fugitive Dust

One mitigation measure in the DEIS for air quality seems to implicate dust palliatives in possible desert tortoise significant impacts, potentially we believe to the health of tortoises:

MM T&E-1: Dust Palliative Study Funding

In accordance with MM AQ-1, the Applicant shall contribute funds to a BLM study to understand the effects of dust palliatives mobilized in stormwater runoff on the health of desert tortoises.

This seems to indicate the chemicals in these palliatives still has unknown impacts outside of the project footprints on utility-scale solar projects, and therefore threats could extend well outside the direct ROW and into the surrounding desert due to flash flood events carrying debris, sediment, and chemicals outside tortoise exclusion fences. This is unacceptable in such a high-density tortoise population.

Other air quality mitigation measures in MM-AQ-1 attempt to control emissions by incorporating multiple methods for dust suppression (i.e., water, gravel, and/or regulation-

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compliant palliatives) on unpaved, disturbed areas where no natural vegetation occurs. These details should be worked out now, and not deferred until after project approval. A full Dust Control and Air Quality Plan should be written now and analyzed as part of the draft EIS, as a supplement.

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Nevada large-scale solar projects have recently had a poor record in violating air quality controls, as we have recorded in photographs such as at the Sunshine Valley Solar Project in Amargosa Valley. This mowed-vegetation project repeatedly has fine particulate whirlwinds, and dust clouds emerging from disturbed desert surfaces in construction zones. Despite water trucks attempting to water-down loose dirt, the solar project was too large to control all dust. Construction continued on windy days, yet even on mild breezy days we saw wind-blown dust and clouds of fine particulates from disturbed ground in the construction site. The Gemini Solar Project is proposed to be 8 or 9 times larger, and the dust emissions could be similarly uncontrollable.

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Mitigation measures such as this from the DEIS are far too vague to be useful or prevent air quality hazards: "Incorporate environmental inspection and monitoring measures and other relevant plans to monitor and respond to air quality during construction, operations, and decommissioning, including adaptive management protocols."

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Removal of stabilized soils and biological soil crust creates a destructive cycle of airborne particulates and erosion. As more stabilized soils are removed, blowing particulates from recently eroded areas act as abrasive catalysts that erode the remaining crusts, thus resulting in more airborne particulates.

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We are concerned that industrial construction in the region will compromise the air quality to the point where not only visual resources, but public health will be impacted.

Epidemiologists investigated an outbreak of valley fever that had sickened 28 workers at two large solar power construction sites in San Luis Obispo County.²³

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²³ <http://articles.latimes.com/2013/may/01/local/lame-in-valley-fever-solar-sites-20130501>



^Fugitive dust in whirlwinds at Sunshine Valley Solar Project, Nevada, August 2019, despite mitigation measures from water trucks. Also note the heavy truck traffic on this Mojave Desert surface as deliveries are made to construct the solar project.

Gemini Solar is 11 square-miles of carbon sequestering soils.

The technical report, “Air Quality and Climate Change”,²⁴ does not account for the CO₂ as it is inhaled above ground and exhaled below ground and stored in a biological web of mycorrhiza. This process of photosynthesis and respiration is as old as plant life systems.²⁵ The layered caliche underground at shallow depths is fossilized carbon. The soil on the Project site, as described in the DEIS, illustrates these phenomena:

[B7-160]

“The subsurface soils on the Project site have a low collapse potential; that is, they hold their volume stable when wet. Significant layers of moderately hard to very hard, strongly cemented soil (caliche) with rock-like characteristics were encountered in subsurface soils on the Project site. Numerous, relatively thin layers of caliche were interbedded in the native soil layers, and several layers of slightly cemented native soil

²⁴ RCH Group. 2019. "Air Quality and Climate Change Technical Report." Gemini Solar Project N-84631. March 2019.

²⁵ Robin Kobaly, *The Desert Under Our Feet – An extraordinary Biological Web that Serves Us in Countless Ways* Desert Report, March 2019, synthesizes 29 scientific peer reviewed journal articles focused on carbon sequestration in desert soils.

were encountered during the preliminary geotechnical investigation for the Project. (Ninyo and Moore 2018). ”²⁶

In 2014, R.D. Evans et.al published the results of a unique 10 years project studying carbon sequestration in Mojave Desert soils. ^{27,28} *“This study quantifies the economic value of one specific ecosystem service provided by NPS lands – the benefits of climate regulation resulting from terrestrial carbon sequestration.”* (Introduction) Figure 2 shows the top 20 NPS Units by Carbon Sequestration Value. Within the top 15 are the four desert national parks: Joshua Tree NP, Mojave National Preserve, Death Valley NP, and Lake Mead National Recreation Area. The desert parks rank so high because of the vast acreage that is preserved. Lake Mead’s value is approximately \$12 million/year. We also learn that Lake Mead annually sequesters 0.5 Metric Tons of CO₂/hectare.

We can use the Lake Mead value to calculate the Metric Tons of Carbon sequestered per year on the intact Gemini Solar Project site.

11 square-miles = 2849 hectares X 0.5 Metric Tons = 1,425 Metric Tons of CO₂ sequestered/year.

Construction of the Project will stop sequestration (see Construction below). **Over the 30-year life of the Project 42,750 Metric Tons of CO₂ will be emitted instead of sequestered.** Since the functioning underground biological web was destroyed during construction of the project – regardless of the alternative chosen – that number can reasonably be multiplied again by an additional hundreds, if not thousands, of years until complete recovery. In making this calculation consult Evans for the increased amount of atmospheric CO₂ anticipated by 2050. In addition, the land area has stored carbon, possibly for millennia, which should be accounted for. And finally, groundwater for the project will be pumped from a carbonate aquifer. This must also be studied for effect.

The Proposed Action would include traditional disk and roll development methods to remove vegetation across the 11 square-mile site.

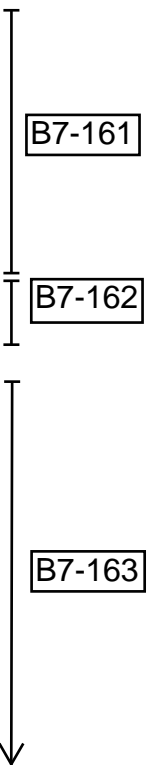
The Hybrid Alternative would use traditional methods on approximately 2,500 acres (4 square-miles) and mowing leaving vegetation and natural land contours in place on 4,600 acres (7 square-miles).

The All Mowing Alternative uses mowing across the landscape. (11 square-miles). Mowing is not a gentle process as seen below.

²⁶ DEIS Volume 1 Page 3-19

²⁷ RD Evans et.al., *Greater ecosystem carbon in the Mojave Desert after ten years exposure to elevated CO₂*, Nature Climate Change Letters published online: 6 April 2014. See attached PDF

²⁸ WSU NEWS Posts Research: Arid areas absorb unexpected amounts of carbon. Interview with R.D. Evans, published April 6, 2014. See attached PDF.



When calculating disturbance it is important to know how many panels and how they would be mounted on trackers across the project site. As an estimate we used the data provided by NextEra for the 482-acre (.75 square-miles) Ord Mountain Solar Project San Bernardino County CA. The Gemini site is 14.7 times the Ord Mt. site. Ord Mt. Solar has 250,000 panels mounted on 3,000 trackers;

14.7 X 250,000 = 3,675,000 panels

14.7 X 3,000 = 44,100 trackers

7,100 acres /44,100 trackers = one tracker installed every 0.16 acre.

Construction would include:

*Mowing and panel construction would occur using skid steer vehicles or other tracked vehicles such as loaders, skid steers, cranes, and graders (to level areas for PCSs and battery storage). Tracked vehicles would be used to minimize soil disruption. A flail-type mower mounted on skids that are mounted on a **low-ground pressure tractor, approximately 5 to 6 pounds per square inch (psi) (34 to 41 kilopascals), is an example of this type of equipment (Figure 2-21).** A rubber-tracked skid steer or a steel-tracked excavator could also be used. **These vehicles typically have a footprint of approximately 4 feet (1.2 meters) per track. One vehicle can likely access two solar array rows at a time so approximately 8 feet (2.4 meters) of vegetation would be crushed every 40 feet (12 meters) in a worst-case scenario in the mowed areas. From three to 10 passes are needed to install each set of solar array rows. Passes are typically needed to install pile posts, to install racking and tracker system, to install the panels, to wire the panels, and then to restore any surface along the route, as needed.** The mowing method of construction would also minimize the areas of grading and leveling. Grading would be conducted in areas where existing topography must be modified for installation and operations. Surface drainage channels would remain largely unchanged. **Vegetation in the solar array areas that could affect the operation of the solar panels, that is not crushed or removed by grading on the Project site, would be mowed.** Dust palliatives would not be used. (DEIA at 2-8, emphasis ours)*

Although mowing could or not kill all the native vegetation it will damage the underground biological sequestering web which will take centuries to recover.

For decommissioning, the DEIS claims that: “Natural revegetation is slow, but restoration techniques have been observed to initiate ecosystem recovery and accomplish project objectives in Mojave Desert study areas (Abella and Newton 2009). A Site Restoration Plan would be prepared that addresses revegetation success during decommissioning in order to minimize effects.”²⁹

²⁹ DEIS Volume 1, Page 3-23

Reviewing Abella and Newton (2009), the authors actually state that native plant restoration is problematic and very experimental in the Mojave Desert, and much more study needs to be done:

*A systematic analysis of 23 revegetation studies reported in 19 publications revealed that many native shrub species (e.g., *Ambrosia dumosa*, *Atriplex* spp., *Larrea tridentata*) can be consistently established ($\geq 50\%$ survival) through planting, even in years of below average precipitation. Proper plant care and supplemental treatments may be needed to avoid heavy mortality of some species, however, in inhospitable conditions. Seeding also resulted in plant establishment, at least during the duration of studies which were ≤ 5 years. Several treatments, such as cages or shelters, increased plant survival and vigor in planting studies, although these treatments require cost/benefit analyses. A key aspect of revegetation research in general is that many factors associated with plant stock (e.g., size and root development of plants), methods (e.g., drill versus broadcast seeding), treatments (e.g., irrigation, cages), and site factors and climate can interact with species performance and treatment effectiveness to affect revegetation outcomes. Interactions among these factors have been little studied, and revegetation studies are well suited to factorial experimental approaches. Another important research need is determining which revegetation prescriptions can meet particular functional objectives (such as competing with exotic plants or reducing soil erosion), and what functional benefits arise from different revegetation approaches. Of the 19 publications that met inclusion criteria for this review, 47% were published prior to 1988, only 16% since 2000, and none after 2001 (table 1). Many early revegetation projects focused on exotic species in southwestern United States arid lands (Cox et al. 1982). There also are relatively recent examples of using persistent exotic species in revegetation projects, including the invasive grasses *Schismus barbatus* (Mediterranean grass) and *Bromus rubens* (Clary and Slayback 1983, Jackson et al. 1991, Grantz et al. 1998a). **In our view, research on native species and the contexts and treatments that allow them to be successfully used in revegetation is still in its infancy, as is propagating large quantities of candidate revegetation species.** Revegetation, and funding for it, will likely only become increasingly important with increasing disturbance from expanding human populations and disturbance, climate change, and new disturbances like landscape-scale wildfires (Lovich and Bainbridge 1999). The systematic review, evidence-based approach employed here for assessing the status of knowledge of revegetation in the Mojave Desert may be useful in other regions and for re-evaluating the species and treatment effectiveness data derived from future research.”³⁰ (emphasis ours)*

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Perhaps the funding and experience will be available when the Project developer/owner is ready for the 11 square-miles to be restored. There is no mention of bonding and monitoring to

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³⁰ Abella, Scott R., and Alice C. Newton. 2009. "A systematic review of species performance and treatment effectiveness for revegetation in the Mojave Desert, USA." In *Arid Environments and Wind Erosion*, by A. Fernandez-Bernal and M. A. De La Rosa, 45-74. Pages 65-66.

support what will be a long and costly effort. Any Site Restoration Plan should not be deferred until after full public review.

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Conclusion:

The Gemini Solar Project would be the largest approved solar project on public lands in the US. The Draft Environmental Impact Statement is written for the purpose of fast-tracking the approval of this project. The DEIS is incomplete and lacks basic information that would be useful for stakeholders to make meaningful comments. The Purpose and Need Statement is favorable to the developer and the BLM failed to review a full range of alternatives. A broader Purpose and Need Statement, reduced footprint and off-site alternatives should have been included in the DEIS. While we request a No Action Alternative for Gemini Solar, the DEIS is designed to make approval of the project quick and simple for the BLM. Therefore, we request that the BLM draft a Supplemental Environmental Impact Statement which includes a broader Purpose and Need Statement as well as a full range of reasonable alternatives. This would enable the BLM to reject this application more easily and select a No Action Alternative.

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Sincerely,

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References

- Abella, S. R. and A. C. Newton. 2009. A systematic review of species performance and treatment effectiveness for revegetation in the Mojave Desert, USA. *In*, Arid Environments and Wind Erosion, by A. Fernandez-Bernal and M. A. De La Rosa, 45-74. Pages 65-66.
- Bury, B. R., R. A. Luckenbach, and S. D. Busack. 1977. Effects of off-road vehicles on vertebrates in the California desert. Wildlife Research Report 8, <https://pubs.er.usgs.gov/publication/wrr8>
- Haff, P. K. 2001. Desert pavement: An environmental canary? The Journal of Geology, Vol. 109: 661-668.
- Jacobson, E. R., M. B. Brown, L. D. Wendland, D. R. Brown, P. A. Klein, M. M. Christopher, K. H. Berry. 2014. Mycoplasmosis and upper respiratory tract disease of tortoises: A review and update. The Veterinary Journal Vol. 201 (3): 257-264
<https://www.sciencedirect.com/science/article/pii/S1090023314002366>
- U.S. Fish and Wildlife Service. 2015. Range-wide Monitoring of the Mojave Desert Tortoise (*Gopherus agassizii*): 2013 and 2014 Annual Reports. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. 44 pages.