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Chapter 4.0 Alternatives

4.1 INTRODUCTION

This chapter discusses alternatives to the proposed Soda Mountain Solar Project (proposed project). Feasible project alternatives analyzed within this chapter include the following: No Project Alternative, Visual Buffer Alternative, Reduced Building Size Alternative, and No Outdoor Lighting Alternative.

California Code of Regulations Title 20, Division 2, Chapter 5, Appendix B, Section (f) requires the Alternatives analysis for the project's opt-in application to include:

> (1) A discussion of the range of reasonable alternatives to the project, or to the location of the project, including the no project alternative, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and an evaluation of the comparative merits of the alternatives. In accordance with Public Resources Code section 25540.6(b), a discussion of the applicant's site selection criteria, any alternative sites considered for the project, and the reasons why the applicant chose the proposed site.
>
> (2) An evaluation of the comparative engineering, economic, and environmental merits of the alternatives discussed in subsection (f)(1).

CEQA Guidelines Section 15126.6 requires an EIR describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible.

4.2 PROJECT OBJECTIVES

The primary goal of the proposed project is to contribute to the achievement of California's renewable energy goals and create a vital new point of interconnection for renewable energy in San Bernardino County to connect to California's electric transmission infrastructure. There are 7 specific project objectives, as follows:

1. Assist the State of California in achieving or exceeding its Renewables Portfolio Standard and greenhouse gas emissions reduction objectives by developing and constructing new California Renewables Portfolio Standard–qualified solar power generation facilities producing approximately 300 MW.
2. Produce and transmit electricity at a competitive cost.
3. Provide a new source of energy storage that assists the State in achieving its energy storage mandates.
4. Use the existing transmission unused capacity that provides approximately 300 MW of capacity.
5. Utilize existing energy infrastructure to the extent possible by locating solar power generation facilities near existing infrastructure, such as electrical transmission facilities.
6. Site solar power generation facilities in areas of San Bernardino County that have the best solar resource to maximize energy production and the efficient use of land.
7. Develop a solar power generation facility in San Bernardino County that would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

4.3 PROJECT SITE SELECTION

The project site was selected based on consideration of the project objectives, existing infrastructure, engineering constraints, site geology, environmental impacts and electric transmission constraints, among other factors. Appendix A1, Engineering Generation Facility Description, Design and Operation (TN 259708) to the Opt-In Application for the Soda Mountain Solar Project (24-OPT-03) describes these engineering constraints in detail. The proposed project is a large-scale energy infrastructure project that utilizes state-of-the-art solar generation and battery storage technology. The project site is located within a designated federal Section 368 Energy Corridor adjacent to I-15 (Corridor number 27-225) and was selected in part because it is located in close proximity to other existing large-scale infrastructure projects, including the I-15, the proposed Brightline West high speed rail project, and existing transmission lines. The project site is located immediately adjacent to existing roadways that provide readily available access for construction and operations.

The project proposes a large-scale solar and battery storage facility within an area that contains existing but underutilized transmission infrastructure, including the existing Marketplace-Adelanto 500-kilovolt (kV) transmission line operated by the LADWP. The existing Marketplace-Adelanto 500 kV transmission line has the capacity to handle an additional 300 MW of energy, which would be generated by the project. Due to this remaining capacity, the proposed project does not require the construction of significant new off-site transmission line infrastructure and instead maximizes the use of existing infrastructure that is currently underutilized. Any alternative site not in close proximity to existing energy infrastructure would likely require the construction of significant off-site transmission line upgrades, which could potentially increase the environmental effects of the project.

The project site was also selected based on site geology and other environmental factors. The predominantly flat, alluvial nature of the project site generally precludes risk of or susceptibility to geologic hazards such as landslides. The local meteorology of the project site is highly suited for solar energy generation, with normal annual precipitation at approximately 4.48 inches. The project site is also located in a remote area, with no adjacent residential structures. The project site location reduces land use compatibility issues related to utility-scale energy infrastructure, such as battery storage, being located near sensitive receptors such as residences. The project offers a model for safely locating energy generation and storage facilities far away from residential areas, clustered adjacent to dense infrastructure projects and connecting to underutilized transmission lines which prevents the need for new transmission lines to be constructed in wilderness or residential areas.

4.3.1 ALTERNATIVE SITE LOCATIONS

CEQA Guidelines Section 15126.6(f)(2) addresses alternative locations for a project. The key question and first step in the analysis is whether any of the significant effects of the project would be avoided or substantially lessened by constructing the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need to be considered for inclusion in the EIR. Further, CEQA Guidelines Section 15126.6(f)(1) states that among the factors that may be taken into account when addressing the feasibility of alternative locations are whether the project proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the applicant).

No feasible alternative locations for the project exist. The Bureau of Land Management (BLM) approved a Record of Decision (ROD) in 2016, which granted the applicant a right-of-way lease and authorized the applicant to construct, operate, maintain and decommission a solar facility with a footprint as described within the applicant's July 23, 2024 Opt-In Application (24-OPT-03) for the Soda Mountain Solar Project (proposed project). The project applicant, Soda Mountain Solar LLC, does not have control of an alternate site. Prior to entering the right-of-way lease for the project site, the Applicant evaluated multiple alternative site locations. Finding available real estate on which to site a utility-scale battery energy generation and

storage system that feasibly meets most of the basic project objectives while avoiding or substantially reducing at least one significant effect was not possible. As described below, it was determined that Soda Mountain Solar LLC could not reasonably acquire, control, or otherwise have access to an alternative site.

During the 2016 environmental review and project approval process associated with the existing and executed BLM ROD, the project applicant reviewed the following alternative project site locations for feasibility. In connection with the project's CEC Opt-In Application, the applicant has re-considered these alternative project site locations and determined that they remain infeasible for the reasons previously identified. The applicant also re-evaluated for other potential alternative sites and did not identify any new potentially feasible alternative sites.

4.3.1.1 BLM-Administered Public Land Alternatives

During the 2016 environmental review process, the applicant initially reviewed more than 20 sites on BLM-administered public land in southern California, seeking a suitable site with high solar insolation, access to highways, proximity to electric transmission lines, and relatively flat slope (less than 5 percent). Site visits and other additional investigation resulted in the elimination of 15 sites that were subject to prior pending ROW grant applications or were determined to be infeasible due to insufficient size, distance to transmission, greater slopes, access limitations, and other factors. An additional four of the five remaining sites were rejected from further consideration because they were located in Desert Wildlife Management Areas (DWMA) designated to protect desert tortoise. These potential site alternatives were rejected from detailed review because they were not within close proximity to transmission infrastructure, could not be implemented feasibly for technical or other reasons, their development for solar use would have been inconsistent with the basic policy objectives for the management of the area, and their implementation would have substantially similar effects to those of the project.

4.3.1.2 Private Land Alternatives

During the 2016 environmental review process, the applicant also examined 4,853,760 acres of lands within 50 miles of the proposed project site to determine whether a suitable site on private land could be found for the project. The applicant sought lands of sufficient size, contiguity, and proximity to adequate transmission lines to support the project and identified two potential sites with over 2,500 contiguous acres of private land in close proximity to a transmission line: one consisting of approximately 12,020 contiguous acres (the "West Site"), the other consisting of approximately 3,262 contiguous acres (the "East Site"). The West Site and East Site are shown on Figure 1. The applicant rejected these sites based on environmental resource constraints that would have limited the area available for development such that they would be too small to meet the applicant's objectives for the project, and because implementation of these site alternatives would not avoid or substantially lessen any significant effects of the project. To the contrary, the development of either site could cause greater impacts to biological resources than the proposed project due to their proximity to the Mojave River wildlife linkage corridor, Superior-Cronese DWMA (a U.S. Fish and Wildlife Service-designated critical habitat for desert tortoise), and Afton Canyon Area of Critical Environmental Concern (ACEC). Further, the number of individual landowners and lack of sales and lease offerings would make aggregation of the necessary separate parcels infeasible.

4.3.1.3 Brownfields / Degraded Lands Alternative

The U.S. Environmental Protection Agency (USEPA) tracks 480,000 contaminated sites for potential reuse for renewable energy development as part of its RE-Powering America's Lands Initiative. Of these sites, USEPA has identified 5,000 sites nationwide as potentially suitable for photovoltaic (PV) solar. During the 2016 environmental review, the applicant used this tool to select USEPA-tracked sites (i.e., abandoned mined lands, brownfields, (Resource Conservation and Recovery Act) corrective action sites, federal and non-federal Superfund sites, and landfills) as well as state-tracked sites. Only one location with PV solar power potential was identified along the I-15 corridor between Barstow and Las Vegas: the Baker Refuse

Disposal Site. The Baker Refuse Disposal Site is a 10-acre USEPA-tracked landfill located near Baker, California, and approximately 5 miles from LADWP's Marketplace-Adelanto line, which is the nearest transmission line to the site. Although it has "excellent" utility solar potential, this site was determined not large enough to accommodate the project. The applicant considered two other potential landfill sites: the approximately 46-acre Teapot Dome site and the approximately 29-acre Tecopa Disposal Site, each of which is located 30 miles from the Marketplace-Adelanto line. Similar to the Baker Refuse Disposal Site, neither of these other landfill sites was determined to be of sufficient size to accommodate any of the action alternatives.

The applicant also considered the National Training Center at Fort Irwin, which includes a RCRA site comprised of 14 separate RCRA units; however, the RCRA site was not large enough to accommodate the project and at 20 miles distant from the nearest transmission line, it is not sufficiently proximate to meet the project needs. The Barstow Marine Corps Logistics base was also evaluated as an alternative project site as it includes a RCRA site and a Superfund site. However, the size of the contaminated areas was determined too small to accommodate the project. Further, environmental constraints including proximity to the Ord-Rodman Mountain DWMA, Mojave Monkeyflower ACEC, desert tortoise critical habitat, and Mojave River and wildlife linkage corridor, among others, made it unlikely that implementation of an alternative on this site would avoid or substantially lessen any significant effects of the project.

4.4 Applicant's Preferred Alternative

The Applicant's Preferred Alternative would construct a 2,557-acre PV solar energy development, not the 2,058.97-acre project proposed within the applicant's July 23, 2024 Opt-In Application (24-OPT-03) for the Soda Mountain Solar project. The key components of the Applicant's Preferred Alternative include the following and are shown in Figure 2:

1. The solar plant site, i.e., all facilities that create a footprint in and around the field of solar panels, including: the solar field (consisting of solar power arrays identified as the North Array, East Arrays 1 and 2, and South Arrays 1, 2, and 3); operation and maintenance buildings and structures; water supply and stormwater infrastructure; and related infrastructure and improvements;
2. A substation and switchyard for interconnection to the existing transmission system; and
3. Relocation of both a portion of Rasor Road and the Rasor Road BLM kiosk.

The Applicant's Preferred Alternative was presented to the BLM in 2016 as a proposed project. BLM's 2016 ROD authorized a project that was reduced by approximately 500 acres, or nearly 20%, when compared to the Applicant's Preferred Alternative (Figure 3). The 500-acre reduction was achieved by removing the North Array. BLM, in consultation with other resource agencies, required the removal of the North Array from the project to reduce the project's impacts to desert bighorn sheep.

The Applicant is no longer pursuing its Preferred Alternative because the Preferred Alternative would have greater impacts to desert bighorn sheep and because BLM, in consultation with other resource agencies, did not approve the Preferred Alternative and required the removal of the North Array from the project. The proposed project as described within the applicant's July 23, 2024 Opt-In Application (24-OPT-03) for the Soda Mountain Solar Project (proposed project) represents a project alternative that was selected by BLM, in consultation with other resource agencies, to substantially lessen the significant environmental effects of the project related to desert bighorn sheep.

4.5 Other Alternatives Considered but Rejected

CEQA Guidelines Section 15126.6(c) requires consideration of a range of reasonable alternatives. The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be

discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

In addition to the alternatives discussed in Sections 4.3.1 and 4.4 above, other project alternatives that were considered but rejected due to a determination of infeasibility, are discussed below.

4.5.1 WIND ENERGY ALTERNATIVE

The Wind Energy Alterative would construct a 300 MW wind energy generation facility on the project site in place of the solar generation and energy storage facility. Thus, this alternative would install utility-scale wind turbines rather than solar arrays. As with the proposed project, the Wind Energy Alternative would also include supporting infrastructure improvements such as transmission lines, a substation, metrological stations, vehicle access, and water tanks. The construction and operation of meteorological evaluation towers and subsequent turbines would require an amendment to the existing Bureau of Land Management right-of-way grant and subsequent environmental review. The Wind Energy Alterative would meet some of the project objectives since it would produce electricity at a competitive cost (Objective 2) and assist in achieving or exceeding the state's RPS and GHG reduction objectives or the state's renewable energy storage target (Objective 1 and Objective 3). However, this alternative would not provide additional energy through a solar energy project within San Bernardino County (Objective 6 and Objective 7). In addition, this alternative would not provide a new solar project near the existing infrastructure (Objective 5). The Wind Energy Alternative would be unlikely to lessen or avoid the significant impacts from the proposed project and would not meet most of the objectives. Therefore, it was eliminated from further consideration in this EIR.

4.5.2 REDUCED PROJECT FOOTPRINT

A reduced project footprint alternative has been determined infeasible to implement as both a project alternative or mitigation measure. Implementing a reduced project footprint as an alternative or mitigation measure would prevent the project from attaining the majority of the basic project objectives. Additionally, there are specific economic, environmental, social, and technological factors that make implementing a reduced project footprint infeasible as a project alternative or mitigation measure. Attachment 1 provides a determination of infeasibility for one example of a reduced project footprint alternative, specifically implementing a 0.25-mile buffer desert bighorn sheep (*Ovis canadensis nelsoni*) buffer from areas with 10% slope.

Implementation of a 0.25-mile buffer would reduce the project's 300 MW solar energy generation capacity and 300 MW battery energy storage capacity by at least 12%. It is important to note that the reduction in project footprint size due to implementation of a 0.25-mile buffer may not result in a linear reduction in the project's energy generation and storage capacity. In other words, a 12% reduction in the project footprint could result in a reduction in the project's energy generation and storage capacity of much greater than 12%. This is because the project contains civil design features such as roads, fences, and basins, and moving these project components would lead to an even greater reduction to the solar field and BESS size than the 236-acre reduction from buffer implementation.

Attachment 1 provides a detailed analysis of how implementing a 0.25-mile buffer as an alternative or mitigation measure would prevent the project from attaining most of the basic project objectives. Below is a summary of the detailed analysis within Attachment 1.

1. Assist the State of California in achieving or exceeding its Renewables Portfolio Standard and greenhouse gas emissions reduction objectives by developing and constructing new California Renewables Portfolio Standard–qualified solar power generation facilities producing approximately 300 MW.

A Reduced Project Footprint would prevent the project from producing 300 MW of solar energy and would directly conflict with the project objective to transition the State to renewable energy and meeting RPS targets by providing 300 MW of RPS-qualified solar energy generation facilities. This loss of solar energy generation would also impact the State's ability to maintain electrical system reliability under this transition and during extreme climate change driven events. Therefore, implementation of a 0.25-mile buffer from areas with 10% slope, or any Reduced Project Footprint Alternative, as a project alternative would impede the project from attaining project objective #1. See Attachment 1.

2. Produce and transmit electricity at a competitive cost.

A Reduced Project Footprint, such as implementing a 0.25-mile buffer from areas with 10% slope, would cause a significantly more expensive project and impair the Applicant's ability to sell power more cheaply on the wholesale market or to LADWP directly. Therefore, implementation of a 0.25-mile buffer from areas with 10% slope, or any Reduced Project Footprint Alternative, would directly impact the project's ability to save California ratepayers money and would impede the project from attaining project objective #2. See Attachment 1.

3. Provide a new source of energy storage that assists the State in achieving its energy storage mandates.

A reduction in energy generation from a Reduced Project Footprint Alternative would reduce the amount of solar energy that would flow into the BESS and would require the BESS facility to be downsized in the same proportion as the solar field. A downsized solar energy system would not generate sufficient energy to charge a BESS of 300 MW, and the implementation of a Reduced Project Footprint, such as a 0.25-mile buffer, would result in a direct reduction in energy storage capacity. This loss of energy storage would negatively impact the State's ability to accelerate a transition to renewable energy and would negatively impact the State's ability to maintain electrical system reliability under this transition and during extreme climate change driven events. Therefore, implementation of a Reduced Project Footprint, or 0.25-mile buffer from areas with 10% slope, as a project alternative would impede the project from attaining project objective #3. See Attachment 1.

4. Use the existing transmission unused capacity that provides approximately 300 MW of capacity.

A Reduced Project Footprint Alternative, such as a 0.25 buffer from areas with a 10% slope, would prevent the project from producing 300 MW of solar energy and 300 MW of energy storage, and would directly conflict with the project objective of maximizing the utilization of the existing transmission line's unused capacity of 300 MW. Therefore, implementation of a Reduced Project Footprint, such as a 0.25-mile buffer from areas with 10% slope, would impede the project from attaining project objective #4. See Attachment 1.

5. Utilize existing energy infrastructure to the extent possible by locating solar power generation facilities near existing infrastructure, such as electrical transmission facilities.

A Reduced Project Footprint Alternative, such as a 0.25 buffer from areas with a 10% slope, would prevent the project from producing 300 MW of solar energy and the reduced production of energy at this project site would have to be made up by installing solar panels at another site. Thus, the effect of implementing a 0.25-mile buffer from areas with 10% slope would be to preclude the utilization, to the extent possible, of the existing infrastructure adjacent to the project site. This consequence would directly conflict with the project objective of utilizing existing transmission infrastructure. Therefore, implementation of a Reduced

Project Footprint, such as a 0.25-mile buffer from areas with 10% slope, would impede the project from attaining project objective #5. See Attachment 1.

6. Site solar power generation facilities in areas of San Bernardino County that have the best solar resource to maximize energy production and the efficient use of land.

A Reduced Project Footprint Alternative, such as a 0.25 buffer from areas with a 10% slope, would prevent the project from producing 300 MW of solar energy. A reduction in the project footprint could result in a separate project being proposed elsewhere within the County to fully meet energy production goals. This would directly conflict with the project objective of siting solar power generation facilities in areas of San Bernardino County that have the best solar resource to maximize energy production while efficiently using of land. Therefore, implementation of a Reduced Project Footprint Alternative, such as a 0.25-mile buffer from areas with 10% slope, would impede the project from attaining project objective #6. See Attachment 1.

7. Develop a solar power generation facility in San Bernardino County that would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

A Reduced Project Footprint Alternative, such as a 0.25 buffer from areas with a 10% slope, would reduce construction and operational jobs, project taxes, and associated local economic benefits to the County and local businesses. Therefore, implementation of a Reduced Project Footprint Alternative, such as a 0.25-mile buffer from areas with 10% slope, would impede the project from attaining project objective #7. See Attachment 1.

4.6 Analysis of Project Alternatives

CEQA Guidelines Section 15126.6(c) requires the selection of a range of reasonable alternatives for evaluation within an EIR. The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. CEQA Guidelines Section 15126.6(c) requires the EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison (see Tables 1 and 2). If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

4.6.1 Rationale for Selection

CEQA Guidelines Section 15126.6(c) requires an EIR briefly describe the rationale for selecting the alternatives to be discussed. The alternatives analyzed below represent a reasonable range of feasible alternatives that would avoid or substantially lessen one or more significant effects of the project while attaining most of the project objectives. CEQA Guidelines Section 15126.6(f)(1) states that among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent).

A broad range of alternatives were reviewed to determine the appropriate range of feasible project alternatives. Based upon initial screening, it was determined that some of these preliminary alternatives did not accomplish most of the project objectives or would result in greater impacts than the project. Therefore, these alternatives were considered and rejected, as discussed above in Section 4.5. During this screening

process, it was determined that three alternatives would meet most of the project objectives, are potentially feasible, and would avoid or substantially lessen one or more significant environmental impacts, as compared to the proposed project. These alternatives are discussed below and include the Visual Buffer Alternative, Reduced Building Size Alternative and No Outdoor Lighting Alternative.

Table 1. Comparison of Compliance with Project Objectives

Project Objective	Does the Alternative Attain the Project Objective?				
	Proposed Project	**No Project**	**Visual Buffer**	**Reduced Building Size**	**No Outdoor Lighting**
1. Assist the State of California in achieving or exceeding its Renewables Portfolio Standard and greenhouse gas emissions reduction objectives by developing and constructing new California Renewables Portfolio Standard (RPS)–qualified solar power generation facilities producing approximately 300 MW.	Y	N	Y	Y	Y
2. Produce and transmit electricity at a competitive cost.	Y	N	Y	Y	Y
3. Provide a new source of energy storage that assists the state in achieving its energy storage mandates.	Y	N	Y	Y	Y
4. Use the existing transmission unused capacity that provides approximately 300 MW of capacity.	Y	N	Y	Y	Y
5. Utilize existing energy infrastructure to the extent possible by locating solar power generation facilities near existing infrastructure, such as electrical transmission facilities.	Y	N	Y	Y	Y
6. Site solar power generation facilities in areas of San Bernardino County that have the best solar resource to maximize energy production and the efficient use of land.	Y	N	Y	Y	Y
7. Develop a solar power generation facility in San Bernardino County that would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.	Y	N	Y	Y	Y
Y – Yes N – No					

Table 2. Comparison of Environmental Impacts

Issue Area	Proposed Project	No Project	Visual Buffer	Reduced Building Size	No Outdoor Lighting
Aesthetics	Significant and Unavoidable	▼	=	▼	▼
Agriculture	Less than Significant without Mitigation	▼	=	=	=
Air Quality	Less than Significant without Mitigation	▼	=	▼	=

Issue Area	Proposed Project	No Project	Visual Buffer	Reduced Building Size	No Outdoor Lighting
Biological Resources	Less than Significant with Mitigation	▼	▲	▼	=
Cultural Resources	Less than Significant without Mitigation	▼	=	▼	=
Energy	Less than Significant without Mitigation	▼	=	▼	▼
Geology and Soils	Less than Significant without Mitigation	▼	=	▼	=
Greenhouse Gas Emissions	Less than Significant without Mitigation	▲	=	▼	▼
Hazards and Hazardous Materials	Less than Significant without Mitigation	▼	=	▼	=
Hydrology and Water Quality	Less than Significant without Mitigation	▼	=	▼	=
Land Use and Planning	Less than Significant without Mitigation	▼	=	=	=
Mineral Resources	Less than Significant without Mitigation	▼	=	=	=
Noise and Vibration	Less than Significant without Mitigation	▼	=	▼	=
Population and Housing	Less than Significant without Mitigation	▼	=	▼	=
Public Services	Less than Significant without Mitigation	▼	=	=	=
Recreation	Less than Significant without Mitigation	▼	=	=	=
Transportation	Less than Significant without Mitigation	▼	=	▲	=
Tribal Cultural Resources	Less than Significant with Mitigation	▼	=	▼	=
Utilities and Service Systems	Less than Significant without Mitigation	▼	=	▼	=
Wildfire	Less than Significant without Mitigation	▼	=	=	=
Public Health	Less than Significant without Mitigation	▼	=	▼	=

▼ – impact reduced when compared to proposed project

▲ – impact increased when compared to the proposed project

= - impact similar to the proposed project

4.6.2 NO PROJECT ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(1) requires the specific alternative of "No Project" to be evaluated along with its impact. The purpose of describing and analyzing a No Project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. Under the No Project Alternative, none of the direct or indirect environmental impacts associated with construction and operation of the proposed project would occur. If the project were not constructed, the basic project objectives would not be met and the clean energy generation and energy storage benefits related to reliability would not be achieved. The No Project Alternative could result in inadequate system reliability (more blackouts), greater fuel consumption, greenhouse gas emissions, air pollution, climate change and other environmental impacts in the State because clean, efficient energy

generation and storage such as the proposed project would not be available. The No Project Alternative could create the need for other electrical system upgrades, including major transmission projects, which could increase electricity bills for consumers and could result in greater fuel consumption, increased air pollution and other environmental impacts within the region and across the state from additional generation capacity being required to provide additional energy during peak times. The No Project Alternative would also deprive the area of significant construction employment and benefits gained through project related taxes.

4.6.3 VISUAL BUFFER ALTERNATIVE

The proposed project would result in significant and unavoidable impacts to aesthetic resources. The significant and unavoidable impact is related to a change in the visual and community character that is inherent with the conversion of vacant land to an industrial utility-scale solar energy and battery energy storage development. The Visual Buffer Alternative would reduce visual impacts of the project by including a 500-foot buffer between the proposed solar facility and I-15. The 500-foot buffer area would remain in its current undeveloped condition and the PV modules previously located within this buffer area would instead be shifted to the southwest and south. Under the Visual Buffer Alternative, the total project footprint size and ground disturbance acreage would remain the same as the proposed project. All project components, including battery energy storage system, switchyard, and overhead and underground lines, would remain unchanged. Construction and operational activities would remain the same as the proposed project. The Visual Buffer Alternative would be required to implement the same APMs and mitigation measures as the proposed project.

4.6.3.1 Ability to Attain Project Objectives

The discussion below identifies this Visual Buffer Alternative's ability to attain the basic project objectives.

1. Assist the State of California in achieving or exceeding its Renewables Portfolio Standard and greenhouse gas emissions reduction objectives by developing and constructing new California Renewables Portfolio Standard–qualified solar power generation facilities producing approximately 300 MW.

When compared to the proposed project, implementing the Visual Buffer Alternative would not result in a reduction to the total project footprint size and would not prevent the project from producing 300 MW of solar energy. The Visual Buffer Alternative would attain project objective #1.

2. Produce and transmit electricity at a competitive cost.

When compared to the proposed project, implementing the Visual Buffer Alternative would not result in a reduction to the total project footprint size and would not result in a higher construction or operational cost because the project construction and operational components remain unchanged. The Visual Buffer Alternative would attain project objective #2.

3. Provide a new source of energy storage that assists the State in achieving its energy storage mandates.

When compared to the proposed project, implementing the Visual Buffer Alternative would result in no change to the project footprint size or proposed energy generating and storage components. Similar to the proposed project, the Visual Buffer Alternative would produce 300 MW of solar energy generation and 300 MW of battery energy storage and would provide a new source of energy storage that assists the State in achieving its mandates. The Visual Buffer Alternative would attain project objective #3.

4. Use the existing transmission unused capacity that provides approximately 300 MW of capacity.

Similar to the proposed project, the Visual Buffer Alternative would produce power that would be conveyed to the regional electrical grid through an interconnection with the existing Marketplace-Adelanto 500 kV transmission line operated by LADWP. The Visual Buffer Alternative would produce 300 MW of solar energy generation and 300 MW of battery energy storage and, similar to the proposed project, would use the existing transmission system's unused capacity. The Visual Buffer Alternative would attain project objective #4.

5. Utilize existing energy infrastructure to the extent possible by locating solar power generation facilities near existing infrastructure, such as electrical transmission facilities.

Similar to the proposed project, the Visual Buffer Alternative proposes a large-scale solar and battery storage facility in close proximity to existing infrastructure, including the existing Marketplace-Adelanto 500 kV transmission line operated by the LADWP. The Visual Buffer Alternative would not reduce the project footprint size and would allow for the project components to connect to the existing energy infrastructure. The energy generation and storage under the Visual Buffer Alternative remains unchanged when compared to the proposed project and would similarly maximize the use of existing energy infrastructure in the project area. The Visual Buffer Alternative would attain project objective #5.

6. Site solar power generation facilities in areas of San Bernardino County that have the best solar resource to maximize energy production and the efficient use of land.

Similar to the proposed project, the Visual Buffer Alternative would be located within a designated federal Section 368 Energy Corridor adjacent to I-15 (Corridor number 27-225), in an area well-suited to utility-scale solar energy generation with low annual precipitation, relatively flat slopes, vacant land, and no nearby residences or other sensitive land uses. No changes in solar power generation and energy storage would occur under this Alternative, allowing for the maximization of energy production and the efficient use of land. The Visual Buffer Alternative would attain project objective #6.

7. Develop a solar power generation facility in San Bernardino County that would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

When compared to the proposed project, implementing the Visual Buffer Alternative would not result in a reduction to the total project footprint size and would not reduce any construction or operational jobs. Under the Visual Buffer Alternative, it is expected that project taxes and associated local economic benefits to San Bernardino County and local businesses would remain the same as the proposed project. The Visual Buffer Alternative would attain project objective #7.

4.6.3.2 Comparison of the Effects of the Visual Buffer Alternative to the Proposed Project

***Aesthetics*:** The applicant identified and committed to implementing APM AES-1 through APM AES-5 as part of the proposed project to avoid or substantially lessen potentially significant impacts to visual and aesthetic resources, to the extent feasible. The project site itself is of high visual quality. The project would redefine the visual character of the site and the project vicinity. A change in character is inherent with the conversion of vacant land to an industrial utility-scale solar energy and battery energy storage development. Potential effects on existing visual quality and character would be minimized by implementation of APM AES-1 through AES-4. However, the project would remain highly visible and out-of-character with the existing high-quality visual landscape as seen from public viewpoints, resulting in significant and unavoidable impacts to the existing visual quality and character of the site and surroundings. No other potentially feasible mitigation measures would avoid or substantially lessen this significant effect.

When compared to the proposed project, the Visual Buffer Alternative would increase the project fence line setback from 1-15 to reduce the immediately adjacent views of the project from I-15. As experienced from I-15 under this alternative, the solar arrays would range from 500 feet up to 0.5 mile to the east and would

be visually noticeable within the predominantly natural-appearing, rural desert landscape. However, because of the setback, more vegetation and terrain would screen the facilities and the distance would reduce the views into the project themselves. While portions of the low-profile solar arrays would be visible as a linear, horizontal, medium- to dark-gray areal mass on the valley floor, the low profile of the solar arrays, combined with the degree of topographical change, increased distance, and atmospheric conditions between these sites and the project viewers indicate that viewers would have reduced views of the project. This represents a reduction in impacts to aesthetic resources, when compared to the proposed project.

Similar to the proposed project, the Visual Buffer Alternative would introduce elements and patterns that are not currently found in the viewshed, resulting in moderate visual contrast from I-15. The existing high visual quality visual character as seen from these viewpoints would be degraded, and the existing rural and open space would be replaced with an inherent semi-industrial, utilitarian landscape character. Although the Visual Buffer Alternative would reduce visual impacts near the I-15 due to the setback, implementation of this Alternative would still redefine the visual character of the site and the project vicinity. Similar to the proposed project, this change in visual character is inherent with the conversion of vacant land to an industrial utility-scale solar energy and battery energy storage development and would represent a significant and unavoidable impact. Therefore, the aesthetics impacts of the Visual Buffer Alternative would be slightly reduced when compared to the proposed project but would remain significant and unavoidable.

***Agricultural Resources*:** There are no significant agriculture or forestry resources on the project site. Therefore, similar to the proposed project, implementation of the Visual Buffer Alternative alternative would result in less than significant impacts to agriculture and forestry resources. Agricultural resources impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Air Quality*:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to air quality, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to conflicts with applicable air quality plans, cumulatively considerable net increases of any criteria pollutant for which the project region is in nonattainment, or any other emissions, such as odors. With implementation of the Visual Buffer Alternative, the project footprint would be slightly shifted to the south but the project footprint size and the total quantities related to on-site grading and associated ground disturbance would be similar to the proposed project. Similar to the proposed project, construction activities associated with implementing the Visual Buffer Alternative would generate air contaminant emissions such as carbon dioxide, nitrogen oxides, particulate matter, carbon monoxide and odors. Therefore, air quality impacts of the Visual Buffer Alternative would remain similar to the proposed project and, with implementation of APM AIR-1 through APM AIR-9, would be less than significant.

***Biological Resources*:** The applicant identified and committed to implementing APM BIO-1 through APM BIO-39 as part of the proposed project to avoid or substantially lessen potentially significant impacts to biological resources, to the extent feasible. The project is also required to implement mitigation measures MM BIO-1 through MM BIO-28. With implementation of these APMs and mitigation measures, the proposed project was determined to have a less than significant impact related to candidate, sensitive or special-status species; riparian and sensitive natural communities; wetlands; wildlife movement; and conflicts with local or state policies, ordinances or habitat conservation plans. With implementation of the Visual Buffer Alternative, the project footprint would be slightly shifted to the south but the project footprint size and the total quantities related to on-site grading and associated ground disturbance would be similar to the proposed project. Similar to the proposed project, construction activities associated with vegetation removal would result in potentially significant impacts to biological resources. However, shifting the project footprint to the south has the potential to result in greater impacts to the bighorn sheep due to the project footprint being located within areas designated as higher value conservation planning linkages, within areas designated as higher quality within bighorn sheep connectivity modeling and within areas that have higher documented bighorn sheep movement point data, particularly during winter and spring months,

Therefore, due to the potential for increased impacts to bighorn sheep the biological resources impacts of the Visual Buffer Alternative would be greater than the proposed project.

***Cultural Resources*:** The applicant identified and committed to implementing APM CUL-1 through APM CUL-3 as part of the proposed project to avoid or substantially lessen potentially significant impacts to cultural resources, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to historical resources, archaeological resources and human remains. With implementation of the Visual Buffer Alternative, the total project footprint would be slightly shifted to the south but the project footprint size and the total quantities related to on-site grading and associated ground disturbance would be similar to the proposed project. Due to the fact that the construction footprint and construction techniques would be similar in size and scope under the Visual Buffer Alternative to the proposed project, the potential impacts to cultural resources is anticipated to be similar. Therefore, the cultural resources impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Energy*:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to energy, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to wasteful, inefficient or unnecessary consumption of energy and conflicts with state and local renewable and energy efficiency plans. With implementation of the Visual Buffer Alternative, the total project footprint would be slightly shifted to the south but the project footprint size and the total quantities related to on-site grading and associated ground disturbance would be similar to the proposed project. Similar to the proposed project, construction activities associated with implementing the Visual Buffer Alternative would require the use of diesel-powered equipment during construction. Energy consumption under the Visual Buffer Alternative is expected to be the same during construction and operation as under the proposed project. Therefore, energy impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Geology and Soils*:** The applicant identified and committed to implementing APM AIR-4, APM GEO-1 through APM GEO-6, and APM HWQ-1 as part of the proposed project to avoid or substantially lessen potentially significant impacts to geology and soils, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to seismic hazards, soil erosion or loss of topsoil, unstable geologic units, expansive soils and wastewater disposal systems. When compared to the proposed project, there are no significant differences in the geology or soils present at the modified footprint proposed under the Visual Buffer Alternative. Therefore, there are no significant differences in the potential effects related to geology and soils between the proposed project and the Visual Buffer Alternative. The geology and soils impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Greenhouse Gas Emissions*:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to greenhouse gas emissions, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to direct or indirect greenhouse gas emissions and conflicts with applicable plans, policies or regulations adopted to reduce the emissions of GHGs. With implementation of the Visual Buffer Alternative, the total project footprint would be slightly shifted to the south but the project footprint size and the total quantities related to on-site grading and associated ground disturbance would be similar to the proposed project. Similar to the proposed project, construction activities associated with implementing the Visual Buffer Alternative would generate greenhouse gas emissions from construction equipment, vehicles used to haul equipment and materials and from vehicles used by workers commuting to and from the site. Therefore, the greenhouse gas emission impacts of the Visual Buffer Alternative would remain similar to the proposed project.

Hazards and Hazardous Materials: The applicant identified and committed to implementing APM AIR-1, APM BIO-12, APM BIO-21, APM FIRE-1, APM HAZ-1 through APM HAZ-3 and APM USS-1 to avoid or substantially lessen potentially significant impacts to hazards and hazardous materials, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to hazardous materials, accidental releases, emissions near schools, hazardous materials sites compiled pursuant to Government Code Section 65962.5, airports, emergency response and evacuation plans, wildfires and solid waste. With implementation of the Visual Buffer Alternative, the total project footprint would be slightly shifted to the south but the project footprint size and the total quantities related to on-site grading and associated ground disturbance would be similar to the proposed project. Similar to the proposed project, the Visual Buffer Alternative would use hazardous materials during construction and operation. There would be no significant difference in hazardous materials used or the hazards posed by construction or operational activities. Therefore, hazards and hazardous materials impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Hydrology and Water Quality*:** The applicant identified and committed to implementing APM BIO-5, APM GEO-3, APM HAZ-1, APM HWQ-1 and APM HWQ-2 to avoid or substantially lessen potentially significant impacts to hydrology and water quality, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to violating water quality standards, decreasing groundwater supplies, altering existing drainage patterns, flood hazards, water quality control plans or sustainable groundwater management plans. With implementation of the Visual Buffer Alternative, the total project footprint would be slightly shifted to the south but the project footprint size and the total quantities related to on-site grading and associated ground disturbance would be similar to the proposed project. Similar to the proposed project, construction activities under the Visual Buffer Alternative would include vegetation removal, grubbing, grading and the installation of roads and supporting facilities. Similar to the proposed project, these construction activities would also involve changes to site topography and could result in alterations to drainages, erosion, sedimentation and stormwater runoff. Therefore, hydrology and water quality impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Land Use and Planning*:** The applicant identified and committed to implementing APM LU-1 and APM LU-2 to avoid or substantially lessen potentially significant impacts to land use and planning, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to dividing an established community and conflicting with a land use plan. When compared to the proposed project, there are no significant differences in the land use or planning designations at the modified footprint proposed under the Visual Buffer Alternative. Therefore, there are no significant differences in the potential effects related to land use and planning between the proposed project and the Visual Buffer Alternative. The land use and planning impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Mineral Resources*:** There are no significant mineral resources on the project site. Therefore, similar to the proposed project, implementation of the Visual Buffer Alternative would result in less than significant impacts to mineral resources. Mineral resources impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Noise and Vibration*:** The applicant identified and committed to implementing APM N-1 to avoid or substantially lessen potentially significant impacts to noise and vibration, to the extent feasible. With implementation of this APM, the proposed project was determined to have a less than significant impact related to a temporary or permanent increase in ambient noise levels, excessive vibration, and private or public airports. With implementation of the Visual Buffer Alternative, the total project footprint would be slightly shifted to the south but the project footprint size and the total quantities related to on-site grading and associated ground disturbance would be similar to the proposed project. Similar to the proposed project, construction activities under the Visual Buffer Alternative would result in the generation of noise and

vibration during construction and operational activities. Project-specific noise and vibration created during the project construction period would be expected to be the same as under the proposed project. Therefore, noise and vibration impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Paleontological Resources*:** The applicant identified and committed to implementing APM GEO-7 through APM GEO-11 as part of the proposed project to avoid or substantially lessen potentially significant impacts to paleontological resources. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to directly or indirectly destroying a unique paleontological resource or site or unique geologic feature. When compared to the proposed project, there are no significant differences in the geology or soils present at the modified footprint proposed under the Visual Buffer Alternative. Therefore, there are no significant differences in the potential effects related to paleontological resources between the proposed project and the Visual Buffer Alternative. Paleontological resource impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Population and Housing*:** The project would be located on undeveloped land and does not contain or propose any residential structures. Implementation of the project would not result in any significant impacts related to increasing population growth or displacing people or housing. Under the Visual Buffer Alternative, the size and scale of the project would remain unchanged and there would be no significant difference regarding workforce requirements and effects on population and housing. Therefore, the population and housing impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Public Services*:** The proposed project does not contain any components that would result in a substantial adverse impact to fire protection, police, schools or other public facilities and impacts would be considered less than significant. There would be no significant differences between the proposed project and the Visual Buffer Alternative regarding public services or facilities. Therefore, public service impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Recreation*:** The applicant identified and committed to implementing APM REC-1 to avoid or substantially lessen potentially significant impacts to recreation, to the extent feasible. With implementation of this APM, the proposed project was determined to have a less than significant impact related to the deterioration of existing or need to construct new neighborhood or regional parks and recreational facilities. Under implementation of Visual Buffer Alternative, the recreation components of the project remain unchanged and there would be no significant difference when compared to the proposed project. Therefore, recreation impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Transportation*:** The applicant identified and committed to implementing APM TRA-1, APM TRA-2 and APM REC-1 to avoid or substantially lessen potentially significant impacts to transportation and traffic, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to conflicts with circulation systems, conflicts with CEQA guidelines Section 15064.3, transportation hazards and emergency access. Under implementation of the Visual Buffer Alternative, the transportation and traffic components of the project would remain unchanged and the same public roads and transportation needs would occur. Therefore, transportation impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Tribal Cultural Resources*:** The applicant identified and committed to implementing APM CUL-1 through APM CUL-3 as part of the proposed project to avoid or substantially lessen potentially significant impacts to tribal cultural resources, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to tribal cultural resources. With implementation of the Visual Buffer Alternative, the total project footprint would be slightly shifted to the south but the project footprint size and the total quantities related to on-site grading and associated ground disturbance would be similar to the proposed project. Due to the fact that the construction footprint and construction techniques would be similar in size and scope under the Visual Buffer Alternative to the

proposed project, the potential impacts to tribal cultural resources is anticipated to be similar. Therefore, tribal cultural resources impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Utilities and Service Systems*:** The applicant identified and committed to implementing APM USS-1 and APM USS-2 as part of the proposed project to avoid or substantially lessen potentially significant impacts related to utilities and service systems, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to water supplies, water facilities, wastewater, stormwater, natural gas, telecommunications or solid waste facilities. Under the Visual Buffer Alternative, there would be no significant difference regarding the generation of waste or use of utilities and service systems by construction and operation activities. Therefore, the utilities and service system impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Wildfire*:** The proposed project would result in less than significant impacts related to emergency response and evacuation plans, wildfire risk and post-wildfire risks. Under implementation of the Visual Buffer Alternative, there would be no change in proposed project size, project construction or project components. The construction methods and operational risks for fire ignition would be the same as the proposed project. Therefore, wildfire impacts of the Visual Buffer Alternative would remain similar to the proposed project.

***Public Health*:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to public health, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to substantial pollutant concentrations such as toxic air contaminants, fugitive dust, naturally occurring asbestos and valley fever. Under the Visual Buffer Alternative, the project footprint size and the amount of on-site grading and associated ground disturbance would remain the same as the proposed project. Because the construction footprint would be similar in size, the potential for impacts related to fugitive dust, naturally occurring asbestos and valley fever would be similar to that identified for the proposed project.

4.6.4 Reduced Building Size

Under the proposed project, three buildings related to operations, maintenance, and storage would be constructed: one building would be 2,400 square feet, and the other two buildings would each be 5,000 square feet in area. These buildings would be located in the northwest portion of the site next to the battery energy storage system. Under the Reduced Building Size Alternative, only two of these three buildings would be constructed. The two buildings would each be reduced in size to 2,000 square feet, decreasing the total footprint of the buildings from 12,400 square feet to 4,000 square feet. The reduction in building size would require the project to obtain offsite storage to accommodate the project's required equipment and operations and maintenance storage needs. However, the reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to the on-site grading and ground disturbance within the building footprint area. All other project components, including size and generation capacity for the solar system, battery energy storage system, switchyard, and overhead and underground lines would remain unchanged. The Reduced Building Size Alternative would be required to implement the same APMs and mitigation measures as the proposed project.

4.6.4.1 Ability to Attain Project Objectives

The discussion below identifies this Reduced Building Size Alternative's ability to attain the basic project objectives.

1. Assist the State of California in achieving or exceeding its Renewables Portfolio Standard and greenhouse gas emissions reduction objectives by developing and constructing new California Renewables Portfolio Standard–qualified solar power generation facilities producing approximately 300 MW.

When compared to the proposed project, implementing the Reduced Building Size Alternative would not result in a reduction to the total energy generation or storage and would not prevent the project from producing 300 MW of solar energy. The Reduced Building Size Alternative would attain project objective #1.

2. Produce and transmit electricity at a competitive cost.

When compared to the proposed project, implementing the Reduced Building Size Alternative would not result in a reduction to the total energy generation or energy storage and would result in reduced construction costs because there would be less overall construction activity. When compared to the proposed project, the operational costs would potentially increase because the reduction in building size would require the project to obtain offsite storage to accommodate the project's required equipment and operations and maintenance storage needs. Construction costs would be reduced while operational costs would be increased and therefore it is expected the Reduced Building Size Alternative would attain project objective #2.

3. Provide a new source of energy storage that assists the State in achieving its energy storage mandates.

When compared to the proposed project, implementing the Reduced Building Size Alternative would result in no change to the project energy generating or storage components. Similar to the proposed project, the Reduced Building Size Alternative would produce 300 MW of solar energy generation and 300 MW of battery energy storage and would provide a new source of energy storage that assists the State in achieving its mandates. The Reduced Building Size Alternative would attain project objective #3.

4. Use the existing transmission unused capacity that provides approximately 300 MW of capacity.

Similar to the proposed project, the Reduced Building Size Alternative would produce power that would be conveyed to the regional electrical grid through an interconnection with the existing Marketplace-Adelanto 500 kV transmission line operated by the LADWP. The Reduced Building Size Alternative would produce 300 MW of solar energy generation and 300 MW of battery energy storage and, similar to the proposed project, would use the existing transmission system's unused capacity. The Reduced Building Size Alternative would attain project objective #4.

5. Utilize existing energy infrastructure to the extent possible by locating solar power generation facilities near existing infrastructure, such as electrical transmission facilities.

Similar to the proposed project, the Reduced Building Size Alternative proposes a large-scale solar and battery storage facility in close proximity to existing infrastructure, including the existing Marketplace-Adelanto 500-kilovolt (kV) transmission line operated by the LADWP. The Reduced Building Size Alternative would not reduce the project energy generation or storage capacity and would allow for the project components to connect to the existing energy infrastructure. The energy generation and storage under the Reduced Building Size Alternative remains unchanged when compared to the proposed project and would similarly maximize the use of existing energy infrastructure in the project area. The Reduced Building Size Alternative would attain project objective #5.

6. Site solar power generation facilities in areas of San Bernardino County that have the best solar resource to maximize energy production and the efficient use of land.

Similar to the proposed project, the Reduced Building Size Alternative would be located within a designated federal Section 368 Energy Corridor adjacent to I-15 (Corridor number 27-225), in an area well-suited to

utility-scale solar energy generation with low annual precipitation, relatively flat slopes, vacant land, and no nearby residences or other sensitive land uses. No changes in solar power generation and energy storage would occur under this Alternative, allowing for the maximization of energy production and the efficient use of land. The Reduced Building Size Alternative would attain project objective #6.

7. Develop a solar power generation facility in San Bernardino County that would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

When compared to the proposed project, implementing the Reduced Building Size Alternative would decrease the building sizes on-site, which would decrease the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. Under the Reduced Building Size Alternative, the reduction in construction activities would be expected to reduce the local economic benefits to San Bernardino County. However, this reduction in economic benefits would be expected to be only somewhat lesser than the proposed project and the Reduced Building Size Alternative would attain project objective #7.

4.6.4.2 Comparison of the Effects of Reduced Building Size Alternative to the Proposed Project

***Aesthetics*:** The applicant identified and committed to implementing APM AES-1 through APM AES-5 as part of the proposed project to avoid or substantially lessen potentially significant impacts to visual and aesthetic resources, to the extent feasible. The project site itself is of high visual quality. The project would redefine the visual character of the site and the project vicinity. A change in character is inherent with the conversion of vacant land to an industrial utility-scale solar energy and battery energy storage development. Potential effects on existing visual quality and character would be minimized by implementation of APM AES-1 through AES-4. However, the project would remain highly visible and out-of-character with the existing high-quality visual landscape as seen from public viewpoints, resulting in significant and unavoidable impacts to the existing visual quality and character of the site and surroundings. No other potentially feasible mitigation measures would avoid or substantially lessen this significant effect.

When compared to the proposed project, the Reduced Building Size Alternative would reduce the size and scale of the operations and maintenance buildings on-site. When compared to the proposed project, this would represent a reduction in visual impacts due to reduced conflicts with the existing visual character of the site. Although the Reduced Building Size Alternative would lessen some visual impacts, when compared to the proposed project, implementation of this Alternative would still significantly redefine the visual character of the site and the project vicinity. Similar to the proposed project, the change in character is inherent with the conversion of vacant land to an industrial utility-scale solar energy and battery energy storage development and would represent a significant and unavoidable impact. Therefore, although aesthetics impacts of the Reduced Building Size Alternative would be slightly reduced when compared to the proposed project, they would remain significant and unavoidable.

Agricultural Resources: There are no significant agriculture or forestry resources on the project site. Therefore, similar to the proposed project, implementation of the Reduced Building Size Alternative would result in less than significant impacts to agriculture and forestry resources. Therefore, agricultural resources impacts of the Reduced Building Size Alternative would remain similar to the proposed project.

***Air Quality*:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to air quality, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to conflicts with applicable air quality plans, cumulatively considerable net increases of any criteria pollutant for which the project region is in nonattainment, or any other emissions, such as odors. With implementation of the Reduced Building Size Alternative, the buildings

would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in construction activities would reduce the project's air quality emissions due to a decrease in construction equipment usage and an associated decrease in fuel usage. The reduction in construction activities would also result in less fugitive dust during construction, due to less overall construction. Therefore, air quality impacts of the Reduced Building Size Alternative would be reduced when compared to the proposed project.

***Biological Resources*:** The applicant identified and committed to implementing APM BIO-1 through APM BIO-39 as part of the proposed project to avoid or substantially lessen potentially significant impacts to biological resources, to the extent feasible. The project is also required to implement mitigation measures MM BIO-1 through MM BIO-28. With implementation of these APMs and mitigation measures, the proposed project was determined to have a less than significant impact related to candidate, sensitive or special-status species; riparian and sensitive natural communities; wetlands; wildlife movement; and conflicts with local or state policies, ordinances or habitat conservation plans. With implementation of the Reduced Building Size Alternative, the buildings would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to on-site grading and ground disturbance within the building footprint area. The reduction in construction activities and ground disturbance would reduce the potential for the project to result in direct and indirect impacts to candidate and special-status species, riparian habitat and sensitive natural communities, migratory fish and wildlife species. Therefore, the biological resources impact of the Reduced Building Size Alternative would be reduced when compared to the proposed project.

***Cultural Resources*:** The applicant identified and committed to implementing APM-1 through APM-3 as part of the proposed project to avoid or substantially lessen potentially significant impacts to cultural resources, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to historical resources, archaeological resources and human remains. With implementation of the Reduced Building Size Alternative, the buildings would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to on-site grading and ground disturbance within the building footprint area. The reduction in on-site grading and associated ground disturbance would reduce the potential for the project to result in direct, indirect or cumulative impacts to any known or undiscovered archaeological or cultural resources on the project site. Therefore, due to the reduction in construction activities, the cultural resources impacts of the Reduced Building Size Alternative would be reduced when compared to the proposed project.

***Energy*:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to energy, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to wasteful, inefficient or unnecessary consumption of energy and conflicts with state and local renewable and energy efficiency plans. With implementation of the Reduced Building Size Alternative, the buildings would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to on-site grading and ground disturbance within the building footprint area. The reduction in construction activities would reduce the project's energy usage due to the decrease in construction equipment use and the associated use of fuels and oils. The reduction in building size would also result in less electricity usage during operations. Due to the reduction in

construction and operational energy usage, energy impacts of the Reduced Building Size Alternative would be reduced when compared to the proposed project.

***Geology and Soils*:** The applicant identified and committed to implementing APM AIR-4, APM GEO-1 through APM GEO-6, and APM HWQ-1 as part of the proposed project to avoid or substantially lessen potentially significant impacts to geology and soils, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to seismic hazards, soil erosion or loss of topsoil, unstable geologic units, expansive soils and wastewater disposal systems. With implementation of the Reduced Building Size Alternative, the buildings would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to on-site grading and ground disturbance within the building footprint area. The reduction in construction activities would reduce the potential for the project to result in direct, indirect or cumulative impacts to soil erosion, topsoil loss, and paleontological resources. Due to the reduction in construction, the Reduced Building Size Alternative would reduce geology and soils impacts when compared to the proposed project.

***Greenhouse Gas Emi*ssions:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to greenhouse gas emissions, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to direct or indirect greenhouse gas emissions and conflicts with applicable plans, policies or regulations adopted to reduce the emissions of GHGs. With implementation of the Reduced Building Size Alternative, the buildings would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to on-site grading and ground disturbance within the building footprint area. When compared to the proposed project, the reduction in construction activities would reduce greenhouse gas emissions due to a decrease in construction equipment use and the associated use of fuels and oils. Due to the reduction in construction activities, the Reduced Building Size Alternative would reduce greenhouse gas emission impacts when compared to the proposed project.

***Hazards and Hazardous Materials*:** The applicant identified and committed to implementing APM AIR-1, APM BIO-12, APM BIO-21, APM FIRE-1, APM HAZ-1 through APM HAZ-3 and APM USS-1 to avoid or substantially lessen potentially significant impacts to hazards and hazardous materials, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to hazardous materials, accidental releases, emissions near schools, hazardous materials sites compiled pursuant to Government Code Section 65962.5, airports, emergency response and evacuation plans, wildfires and solid waste. With implementation of the Reduced Building Size Alternative, the buildings would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to on-site grading and ground disturbance within the building footprint area. The reduction in construction activities would reduce the amount of fuels and oils required to operate construction equipment, which would reduce the amounts of hazardous materials utilized for the project. Due to the reduction in construction activities, the Reduced Building Size Alternative would reduce hazardous materials and hazard impacts when compared to the proposed project.

***Hydrology and Water Quality*:** The applicant identified and committed to implementing APM BIO-5, APM GEO-3, APM HAZ-1, APM HWQ-1 and APM HWQ-2 to avoid or substantially lessen potentially significant impacts to hydrology and water quality, to the extent feasible. With implementation of these

APMs, the proposed project was determined to have a less than significant impact related to violating water quality standards, decreasing groundwater supplies, altering existing drainage patterns, flood hazards, water quality control plans or sustainable groundwater management plans. The reduction in construction activities and grading under the Reduced Building Size Alternative would reduce the potential for direct, indirect or cumulative impacts related to water quality standards, waste discharge requirements, surface and groundwater quality degradation and the alteration of on-site drainage patterns. Due to the reduction in construction activities, the Reduced Building Size Alternative would reduce hydrology and water quality impacts when compared to the proposed project.

***Land Use and Planning*:** The applicant identified and committed to implementing the APM LU-1 and APM LU-2 to avoid or substantially lessen potentially significant impacts to land use and planning, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to dividing an established community and conflicting with a land use plan. When compared to the proposed project, there are no significant differences in the land use or planning designations at under the Reduced Building Size Alternative. Therefore, there are no significant differences in the potential effects related to land use and planning between the proposed project and the Reduced Building Size Alternative. Land use and planning impacts of the Reduced Building Size Alternative would remain similar to the proposed project.

***Mineral Resources*:** There are no significant mineral resources on the project site. Therefore, similar to the proposed project, implementation of the Reduced Building Size Alternative would result in less than significant impacts to any mineral resource. The mineral resources impacts of the Reduced Building Size Alternative would remain similar to the proposed project.

***Noise and Vibration*:** The applicant identified and committed to implementing APM N-1 to avoid or substantially lessen potentially significant impacts to noise and vibration, to the extent feasible. With implementation of this APM, the proposed project was determined to have a less than significant impact related to a temporary or permanent increase in ambient noise levels, excessive vibration, private or public airports. With implementation of the Reduced Building Size Alternative, the buildings would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to on-site grading and ground disturbance within the building footprint area. Due to the reduction in construction activities, the Reduced Building Size Alternative would reduce noise and vibration impacts when compared to the proposed project.

***Paleontological Resources*:** The applicant identified and committed to implementing APM GEO-7 through APM GEO-11 as part of the proposed project to avoid or substantially lessen potentially significant impacts to paleontological resources. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to directly or indirectly destroying a unique paleontological resource or site or unique geologic feature. With implementation of the Reduced Building Size Alternative, the buildings would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to on-site grading and ground disturbance within the building footprint area. The reduction in construction activities and ground disturbance would reduce the potential for the Alternative to result in direct, indirect or cumulative impacts to any known or undiscovered paleontological resources. The Reduced Building Size Alternative would result in less paleontological resource impacts when compared to the proposed project.

***Population and Housing*:** The project would be located on undeveloped land and does not contain or propose any residential structures. Under the Reduced Building Size Alternative, there would be a reduction in construction workforce due to a reduction in construction activities. The Reduced Building Size would

result in less impacts regarding workforce requirements on population and housing as the size and scale of the construction would be reduced and therefore the construction workforce would be reduced. Due to the reduction in construction workforce, the Reduced Building Size Alternative would reduce population and housing impacts when compared to the proposed project.

***Public Services*:** The proposed project does not contain any components that would result in a substantial adverse impact to fire protection, police, schools or other public facilities and impacts would be considered less than significant. There would be no significant differences between the proposed project and the Reduced Building Size Alternative regarding public services or facilities. Therefore, public service impacts of the Reduced Building Size Alternative would remain similar to the proposed project.

***Recreation*:** The applicant identified and committed to implementing the APM REC-1 to avoid or substantially lessen potentially significant impacts to recreation, to the extent feasible. With implementation of this APM, the proposed project was determined to have a less than significant impact related to the deterioration of existing or need to construct new neighborhood or regional parks and recreational facilities. Under implementation of the Reduced Building Size Alternative, the recreation components of the project remain unchanged and there would be no significant difference when compared to the proposed project. Therefore, recreation impacts of the Reduced Building Size Alternative would remain similar to the proposed project.

***Transportation*:** The applicant identified and committed to implementing APM TRA-1, APM TRA-2 and APM REC-1 to avoid or substantially lessen potentially significant impacts to transportation and traffic, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to conflicts with circulation systems, conflicts with CEQA guidelines Section 15064.3, transportation hazards and emergency access. Under the Reduced Building Size Alternative, there would be a reduction in construction workforce due to a reduction in construction activities. The reduction in construction workforce and reduced building size could result in less construction worker trips and construction materials trips to and from the project site during the construction period. This reduction in construction traffic would reduce transportation impacts when compared to the proposed project, however this reduction in construction traffic would be only slightly smaller than then when compared to the proposed project. During operations, the reduction in building size would require the project to obtain offsite storage to accommodate the project's required equipment and operations and maintenance storage needs. This would potentially result in more truck trips to and from the project site during the operational period, when compared to the proposed project. Therefore, the Reduced Building Size Alternative would increase operational transportation impacts when compared to the proposed project.

***Tribal Cultural Resources*:** The applicant identified and committed to implementing 22P MAPM-1 through 22P MAPM-3 as part of the proposed project to avoid or substantially lessen potentially significant impacts to tribal cultural resources, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to tribal cultural resources. With implementation of the Reduced Building Size Alternative, the buildings would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to on-site grading and ground disturbance within the building footprint area. The reduction in construction activities and ground disturbance would reduce the potential for the project to result in direct, indirect or cumulative impacts to any known or undiscovered tribal cultural resources on the project site. Therefore, the tribal cultural resources impacts of the Reduced Building Size Alternative would be reduced when compared to the proposed project.

***Utilities and Service Systems*:** The applicant identified and committed to implementing APM USS-1 and APM USS-2 as part of the proposed project to avoid or substantially lessen potentially significant impacts to utilities and service systems, to the extent feasible. With implementation of these APMs, the proposed

project was determined to have a less than significant impact related water supplies, water facilities, wastewater, stormwater, natural gas, telecommunications or solid waste facilities. With implementation of the Reduced Building Size Alternative, the buildings would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to on-site grading and ground disturbance within the building footprint area. The reduction in building size and construction activities would reduce water supply, electrical supply and other service system requirements. Therefore, the utilities and service system impacts of the Reduced Building Size Alternative would be reduced when compared to the proposed project.

***Wildfire*:** The proposed project would result in less than significant impacts related to emergency response and evacuation plans, wildfire risk and post-wildfire risks. Under implementation of the Reduced Building Size Alternative, there would be no change in construction or operational risks for fire ignition. Therefore, wildfire impacts of the Reduced Building Size Alternative would remain similar to the proposed project.

***Public Health*:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to public health, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to substantial pollutant concentrations such as toxic air contaminants, fugitive dust, naturally occurring asbestos and valley fever. With implementation of the Reduced Building Size Alternative, the buildings would be reduced in size, decreasing the total construction requirements for the project. The reduction in building size would result in less overall construction activities, including a smaller workforce, fewer construction materials used and reduced usage of construction machinery. The reduction in building size would also result in a reduction to on-site grading and ground disturbance within the building footprint area. The reduction in construction activities and grading would reduce the potential for the project to result in direct, indirect or cumulative impacts related to fugitive dust, naturally occurring asbestos and valley fever. Therefore, the Reduced Building Size Alternative would result in reduced impacts related to public health, when compared to the proposed project.

4.6.5 No Outdoor Lighting Alternative

The proposed project would result in significant and unavoidable impacts to aesthetics, which is related to the introduction of a change in character that is inherent with the conversion of vacant land to an industrial utility-scale solar energy and battery energy storage development. The No Outdoor Lighting Alternative would reduce the visual impacts of the project by prohibiting outdoor lighting at any of the following locations:

1. Outdoor areas:

a) Parking areas

b) Switchyard entrance

c) BESS yard entrance

d) HV Substation entrance

e) Equipment storage areas entrances

2. Access roads:

a) Rasor Rd North connector to HV Substation (I-15 on/off ramp only)

b) Rasor Rd South connector to Solar Array area (I-15 on/off ramp only)

3) Buildings:

a) Substation

b) Switchyard

c) Operations and Maintenance

d) Maintenance Facility

e) Warehouse Facility.

Under the No Outdoor Lighting Alternative, the total project footprint and construction activities would remain the same as the proposed project. All project components, including solar arrays, battery energy storage system, switchyard, and overhead and underground lines would remain unchanged. Operational activities would remain the same as the proposed project. The No Outdoor Lighting Alternative would be required to implement the same APMs and mitigation measures as the proposed project.

4.6.5.1 Ability to Attain Project Objectives

The discussion below identifies the No Outdoor Lighting Alternative's ability to attain the basic project objectives.

1. Assist the State of California in achieving or exceeding its Renewables Portfolio Standard and greenhouse gas emissions reduction objectives by developing and constructing new California Renewables Portfolio Standard–qualified solar power generation facilities producing approximately 300 MW.

When compared to the proposed project, implementing the No Outdoor Lighting Alternative would not result in a reduction to the total project footprint and would not prevent the project from producing 300 MW of solar energy. The No Outdoor Lighting Alternative would attain project objective #1.

2. Produce and transmit electricity at a competitive cost.

When compared to the proposed project, implementing the No Outdoor Lighting Alternative would not result in a reduction to the total project footprint and would not result in a higher construction or operational cost due to the fact that the project construction and operational components remain unchanged. The No Outdoor Lighting Alternative would attain project objective #2.

3. Provide a new source of energy storage that assists the State in achieving its energy storage mandates.

When compared to the proposed project, implementing the No Outdoor Lighting Alternative would result in no change to the project footprint or proposed energy generating and storage components. Similar to the proposed project, the No Outdoor Lighting Alternative would produce 300 MW of solar energy generation and 300 MW of battery storage and would provide a new source of energy storage that assists the State in achieving its mandates. The No Outdoor Lighting Alternative would attain project objective #3.

4. Use the existing transmission unused capacity that provides approximately 300 MW of capacity.

Similar to the proposed project, the No Outdoor Lighting Alternative would produce power that would be conveyed to the regional electrical grid through an interconnection with the existing Marketplace-Adelanto 500 kV transmission line operated by LADWP. The No Outdoor Lighting Alternative would produce 300 MW of solar energy generation and 300 MW of battery storage and, similar to the proposed project, would

use the existing transmission line's unused capacity. The No Outdoor Lighting Alternative would attain project objective #4.

5. Utilize existing energy infrastructure to the extent possible by locating solar power generation facilities near existing infrastructure, such as electrical transmission facilities.

Similar to the proposed project, the No Outdoor Lighting Alternative proposes a large-scale solar energy and battery energy storage facility in close proximity to existing infrastructure, including the existing Marketplace-Adelanto 500 kV transmission line operated by the LADWP. The No Outdoor Lighting Alternative would not reduce the project footprint and would allow for the project components to connect to the existing energy infrastructure. The energy generation and battery storage under the No Outdoor Lighting Alternative remains unchanged when compared to the proposed project and would similarly maximize the use of existing energy infrastructure in the project area. The No Outdoor Lighting Alternative would attain project objective #5.

6. Site solar power generation facilities in areas of San Bernardino County that have the best solar resource to maximize energy production and the efficient use of land.

Similar to the proposed project, the No Outdoor Lighting Alternative would be located within a designated federal Section 368 Energy Corridor adjacent to I-15 (Corridor number 27-225), in an area well-suited to utility-scale solar energy generation with low annual precipitation, relatively flat slopes, vacant land, and no nearby residences or other sensitive land uses. No changes in solar power generation and energy storage would occur under this Alternative, allowing for the maximization of energy production and the efficient use of land. The No Outdoor Lighting Alternative would attain project objective #6.

7. Develop a solar power generation facility in San Bernardino County that would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

When compared to the proposed project, implementing the No Outdoor Lighting Alternative would not result in a reduction to the total project footprint and would not reduce any construction or operational jobs. Under the No Outdoor Lighting Alternative, it is expected that project taxes and associated local economic benefits to San Bernardino County and local businesses would remain the same as the proposed project. The No Outdoor Lighting Alternative would attain project objective #7.

4.6.5.2 Comparison of the Effects of the Visual Buffer Alternative to the Proposed Project

***Aesthetics*:** The applicant identified and committed to implementing APM AES-1 through APM AES-5 as part of the proposed project to avoid or substantially lessen potentially significant impacts to visual and aesthetic resources, to the extent feasible. The project site itself is of high visual quality. The project would redefine the visual character of the site and the project vicinity. A change in character is inherent with the conversion of vacant land to an industrial utility-scale solar energy and battery energy storage development. Potential effects on existing visual quality and character would be minimized by implementation of APM AES-1 through AES-4. However, the project would remain highly visible and out-of-character with the existing high-quality visual landscape as seen from public viewpoints, resulting in significant and unavoidable impacts to the existing visual quality and character of the site and surroundings. No other potentially feasible mitigation measures would avoid or substantially lessen this significant effect.

When compared to the proposed project, the No Outdoor Lighting Alternative would remove all outdoor lighting associated with the project. This would potentially reduce nighttime visual impacts, when compared to the proposed project. However, similar to the proposed project, the Visual Buffer Alternative would introduce elements and patterns that are not currently found in the viewshed. Although the No Outdoor Lighting Alternative would reduce visual impacts associated with nighttime lighting, implementation of this Alternative would still redefine the visual character of the site and the project

vicinity. Similar to the proposed project, the change in character is inherent with the conversion of vacant land to an industrial utility-scale solar energy and battery energy storage development and would represent a significant and unavoidable impact. Therefore, although the No Outdoor Lighting Alternative would reduce visual impacts when compared to the proposed project, due to the nature of the project, they would remain significant and unavoidable.

***Agricultural Resources*:** There are no significant agriculture or forestry resources on the project site. Therefore, similar to the proposed project, implementation of the No Outdoor Lighting Alternative would result in less than significant impacts to agriculture and forestry resources. Agricultural resources impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Air Quality*:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to air quality, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to conflicts with applicable air quality plans, cumulatively considerable net increases of any criteria pollutant for which the project region is in nonattainment, or any other emissions, such as odors. With implementation of the No Outdoor Lighting Alternative, the total project footprint would remain unchanged when compared to the proposed project. Similar to the proposed project, construction activities associated with implementing the No Outdoor Lighting Alternative would generate air contaminant emissions such as carbon dioxide, nitrogen oxides, particulate matter, carbon monoxide and odors. Therefore, air quality impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Biological Resources*:** The applicant identified and committed to implementing APM BIO-1 through APM BIO-39 as part of the proposed project to avoid or substantially lessen potentially significant impacts to biological resources, to the extent feasible. The project is also required to implement mitigation measures MM BIO-1 through MM BIO-28. With implementation of these APMs and mitigation measures, the proposed project was determined to have a less than significant impact related to candidate, sensitive or special-status species; riparian and sensitive natural communities; wetlands; wildlife movement; and conflicts with local or state policies, ordinances or habitat conservation plans. With implementation of the No Outdoor Lighting Alternative, the total project footprint would remain unchanged when compared to the proposed project and the total quantities related to on-site grading and associated ground disturbance would be the same as the proposed project. Similar to the proposed project, construction activities associated with vegetation removal would result in potentially significant impacts to biological resources. Therefore, the biological resources impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Cultural Resources*:** The applicant identified and committed to implementing APM CUL-1 through APM CUL-3 as part of the proposed project to avoid or substantially lessen potentially significant impacts to cultural resources, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to historical resources, archaeological resources and human remains. With implementation of the No Outdoor Lighting Alternative, the total project footprint would remain unchanged when compared to the proposed project and the total quantities related to on-site grading and associated ground disturbance would be the same as the proposed project. Due to the fact that the construction footprint and construction techniques would be similar in size and scope under the No Outdoor Lighting Alternative as to the proposed project, the potential impacts to cultural resources is anticipated to be similar. Therefore, the cultural resources impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Energy*:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to energy, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to wasteful, inefficient or unnecessary consumption of energy and conflicts

with state and local renewable and energy efficiency plans. With implementation of the No Outdoor Lighting Alternative, the total project footprint would remain unchanged when compared to the proposed project and the total quantities related to on-site grading and associated ground disturbance would be the same as the proposed project. Similar to the proposed project, construction activities associated with implementing the No Outdoor Lighting Alternative would require the use of diesel-powered equipment during construction. Energy consumption under the No Outdoor Lighting Alternative is expected to be the same during construction. However, due to reduction in electricity usage related to the removal of outdoor lighting, it is expected that energy using operational activities under the No Outdoor Lighting Alternative would be reduced when compared to the proposed project. Therefore, the energy impacts of the No Outdoor Lighting Alternative would be less than the proposed project.

***Geology and Soils*:** The applicant identified and committed to implementing APM AIR-4, APM GEO-1 through APM GEO-6, and APM HWQ-1 as part of the proposed project to avoid or substantially lessen potentially significant impacts to geology and soils, to the extent feasible. With implementation of these APM's the proposed project was determined to have a less than significant impact related to seismic hazards, soil erosion or loss of topsoil, unstable geologic units, expansive soils and wastewater disposal systems. With implementation of the No Outdoor Lighting Alternative, the total project footprint would remain unchanged when compared to the proposed project and the total quantities related to on-site grading and associated ground disturbance would be the same as the proposed project. When compared to the proposed project, there are no significant differences in the geology or soils under the No Outdoor Lighting Alternative. Therefore, the geology and soils impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Greenhouse Gas Emissions*:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to greenhouse gas emissions, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to direct or indirect greenhouse gas emissions and conflicts with applicable plans, policies or regulations adopted to reduce the emissions of GHGs. With implementation of the No Outdoor Lighting Alternative, the total project footprint would remain unchanged when compared to the proposed project and the total quantities related to on-site grading and associated ground disturbance would be the same as the proposed project. Similar to the proposed project, construction activities associated with implementing the No Outdoor Lighting Alternative would generate greenhouse gas emissions from construction equipment, vehicles used to haul equipment and materials and from vehicles used by workers commuting to and from the site. However, due to the reduced need for electricity related to removing outdoor lighting, it is expected that operational activities greenhouse gas emissions under the No Outdoor Lighting Alternative would be reduced when compared to the proposed project. Therefore, greenhouse gas emissions of the No Outdoor Lighting Alternative would be less than the proposed project.

Hazards and Hazardous Materials: The applicant identified and committed to implementing APM AIR-1, APM BIO-12, APM BIO-21, APM FIRE-1, APM HAZ-1 through APM HAZ-3 and APM USS-1 to avoid or substantially lessen potentially significant impacts to hazards and hazardous materials, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to hazardous materials, accidental releases, emissions near schools, hazardous materials sites compiled pursuant to Government Code Section 65962.5, airports, emergency response and evacuation plans, wildfires and solid waste. With implementation of the No Outdoor Lighting Alternative, the total project footprint would remain unchanged when compared to the proposed project and the total quantities related to on-site grading and associated ground disturbance would be the same as the proposed project. Similar to the proposed project, the No Outdoor Lighting would use hazardous materials during construction and operation. There would be no significant difference in hazardous materials used or the hazards posed by construction or operational activities. Therefore, hazards and hazardous materials impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Hydrology and Water Quality*:** The applicant identified and committed to implementing APM BIO-5, APM GEO-3, APM HAZ-1, APM HWQ-1 and APM HWQ-2 to avoid or substantially lessen potentially significant impacts to hydrology and water quality, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to violating water quality standards, decreasing groundwater supplies, altering existing drainage patterns, flood hazards, water quality control plans or sustainable groundwater management plans. With implementation of the No Outdoor Lighting Alternative, the total project footprint would remain unchanged when compared to the proposed project and the total quantities related to on-site grading and associated ground disturbance would be the same as the proposed project. Similar to the proposed project, construction activities under the No Outdoor Lighting Alternative would include vegetation removal, grubbing, grading and the installation of roads and supporting facilities. Similar to the proposed project, these construction activities would involve changes to site topography and could result in alterations to drainages, erosion, sedimentation and stormwater runoff. Therefore, hydrology and water quality impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Land Use and Planning*:** The applicant identified and committed to implementing APM LU-1 and APM LU-2 to avoid or substantially lessen potentially significant impacts to land use and planning, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to dividing an established community and conflicting with a land use plan. There are no significant differences in the potential effects related to land use and planning between the proposed project and the No Outdoor Lighting Alternative. Therefore, land use and planning impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Mineral Resources*:** There are no significant mineral resources on the project site. Therefore, similar to the proposed project, implementation of the No Outdoor Lighting Alternative would result in less than significant impacts related to mineral resources. Mineral resources impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Noise and Vibration*:** The applicant identified and committed to implementing APM N-1 to avoid or substantially lessen potentially significant impacts to noise and vibration, to the extent feasible. With implementation of this APM, the proposed project was determined to have a less than significant impact related to a temporary or permanent increase in ambient noise levels, excessive vibration, and private or public airports. With implementation of the No Outdoor Lighting Alternative, the total project footprint would remain unchanged when compared to the proposed project and the total quantities related to on-site grading and associated ground disturbance would be the same as the proposed project. Similar to the proposed project, construction activities under the No Outdoor Lighting Alternative would result in the generation of noise and vibration during construction and operational activities. Project specific noise and vibration created during the project construction period is expected to be the same as under the proposed project, due to no reduction in construction. Therefore, noise and vibration impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Paleontological Resources*:** The applicant identified and committed to implementing APM GEO-7 through APM GEO-11 as part of the proposed project to avoid or substantially lessen potentially significant impacts to paleontological resources. With implementation of these APMs, the proposed project was determined to have a less than significant impact related directly or indirectly destroying a unique paleontological resource or site or unique geologic feature. With implementation of the No Outdoor Lighting Alternative, the total project footprint would remain unchanged when compared to the proposed project and the total quantities related to on-site grading and associated ground disturbance would be the same as the proposed project. Therefore, there are no significant differences in the potential effects related to paleontological resources between the proposed project and the No Outdoor Lighting Alternative. Paleontological resource impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Population and Housing*:** The project would be located on undeveloped land and does not contain or propose any residential structures. Implementation of the project would not result in any significant impacts related to increasing population growth or displacing people or housing. There would be no significant difference between the proposed project and the No Outdoor Lighting Alternative regarding workforce requirements or effects on population and housing as the project size and scale would remain unchanged and would require the same workforce to construct and operate. Therefore, population and housing impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Public Services*:** The proposed project does not contain any components that would result in a substantial adverse impact to fire protection, police, schools or other public facilities and impacts would be considered less than significant. There would be no significant differences between the proposed project and the No Outdoor Lighting Alternative regarding public services or facilities. Therefore, public service impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Recreation*:** The applicant identified and committed to implementing APM REC-1 to avoid or substantially lessen potentially significant impacts to recreation, to the extent feasible. With implementation of this APM, the proposed project was determined to have a less than significant impact related to the deterioration of existing or need to construct new neighborhood or regional parks and recreational facilities. Under implementation of No Outdoor Lighting Alternative, the recreation components of the project remain unchanged and there would be no significant difference when compared to the proposed project. Therefore, recreation impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Transportation*:** The applicant identified and committed to implementing APM TRA-1, APM TRA-2 and APM REC-1 to avoid or substantially lessen potentially significant impacts to transportation and traffic, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to conflicts with circulation systems, conflicts with CEQA guidelines Section 15064.3, transportation hazards and emergency access. Under implementation of the No Outdoor Lighting Alternative, the transportation and traffic components of the project remain unchanged and the same public roads and transportation needs would occur. Therefore, transportation impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Tribal Cultural Resources*:** The applicant identified and committed to implementing APM CUL-1 through APM CUL-3 as part of the proposed project to avoid or substantially lessen potentially significant impacts to tribal cultural resources, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to tribal cultural resources. With implementation of the No Outdoor Lighting Alternative, the total project footprint would remain unchanged when compared to the proposed project and the total quantities related to on-site grading and associated ground disturbance would be the same as the proposed project. Due to the fact that the construction footprint and construction techniques would be similar in size and scope under the No Outdoor Lighting Alternative to the proposed project, the potential impacts to tribal cultural resources is anticipated to be similar. Therefore, the tribal cultural resources impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

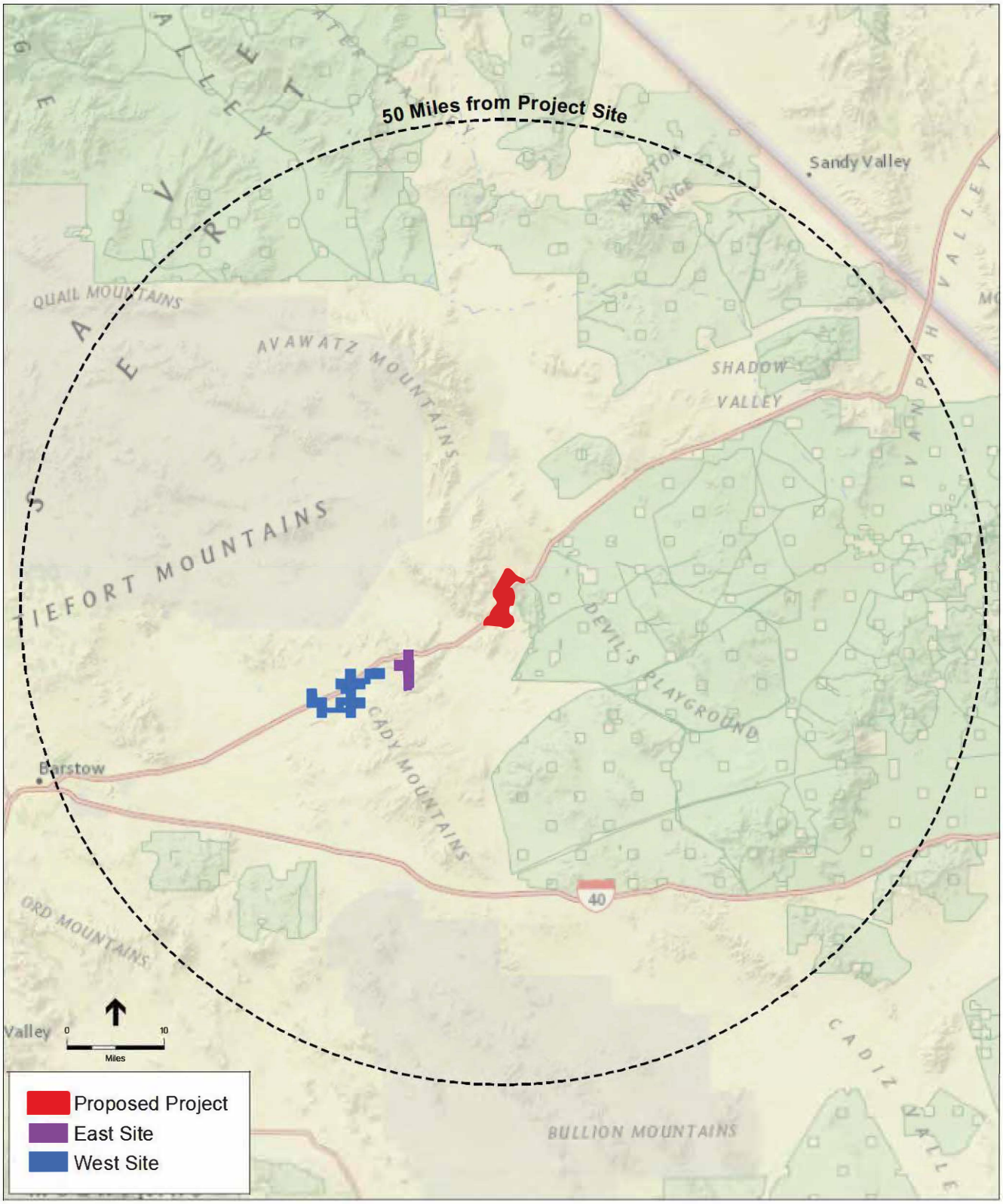
***Utilities and Service Systems*:** The applicant identified and committed to implementing APM USS-1 and APM USS-2 as part of the proposed project to avoid or substantially lessen potentially significant impacts to utilities and service systems, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related water supplies, water facilities, wastewater, stormwater, natural gas, telecommunications or solid waste facilities. Under the No Outdoor Lighting Alternative, there would be no significant difference regarding the generation of waste or use of utilities and service systems during construction and operation activities. Therefore, the utilities and service system impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Wildfire*:** The proposed project would result in less than significant impacts related to emergency response and evacuation plans, wildfire risk and post-wildfire risks. Under implementation of No Outdoor Lighting Alternative, there would be no change in proposed project size, project construction or project components and construction methods and operational risks for fire ignition would be the same as the proposed project. Therefore, wildfire impacts of the No Outdoor Lighting Alternative would remain similar to the proposed project.

***Public Health*:** The applicant identified and committed to implementing APM AIR-1 through APM AIR-9 as part of the proposed project to avoid or substantially lessen potentially significant impacts to public health, to the extent feasible. With implementation of these APMs, the proposed project was determined to have a less than significant impact related to substantial pollutant concentrations such as toxic air contaminants, fugitive dust, naturally occurring asbestos and valley fever. Under the No Outdoor Lighting Alternative, the amount of on-site grading and associated ground disturbance would remain the same as the proposed project. Because the construction activities would be similar in size and scale, the potential for impacts related to fugitive dust, naturally occurring asbestos and valley fever for the No Outdoor Lighting Alternative would be similar to that identified for the proposed project.

4.7 Environmentally Superior Alternative

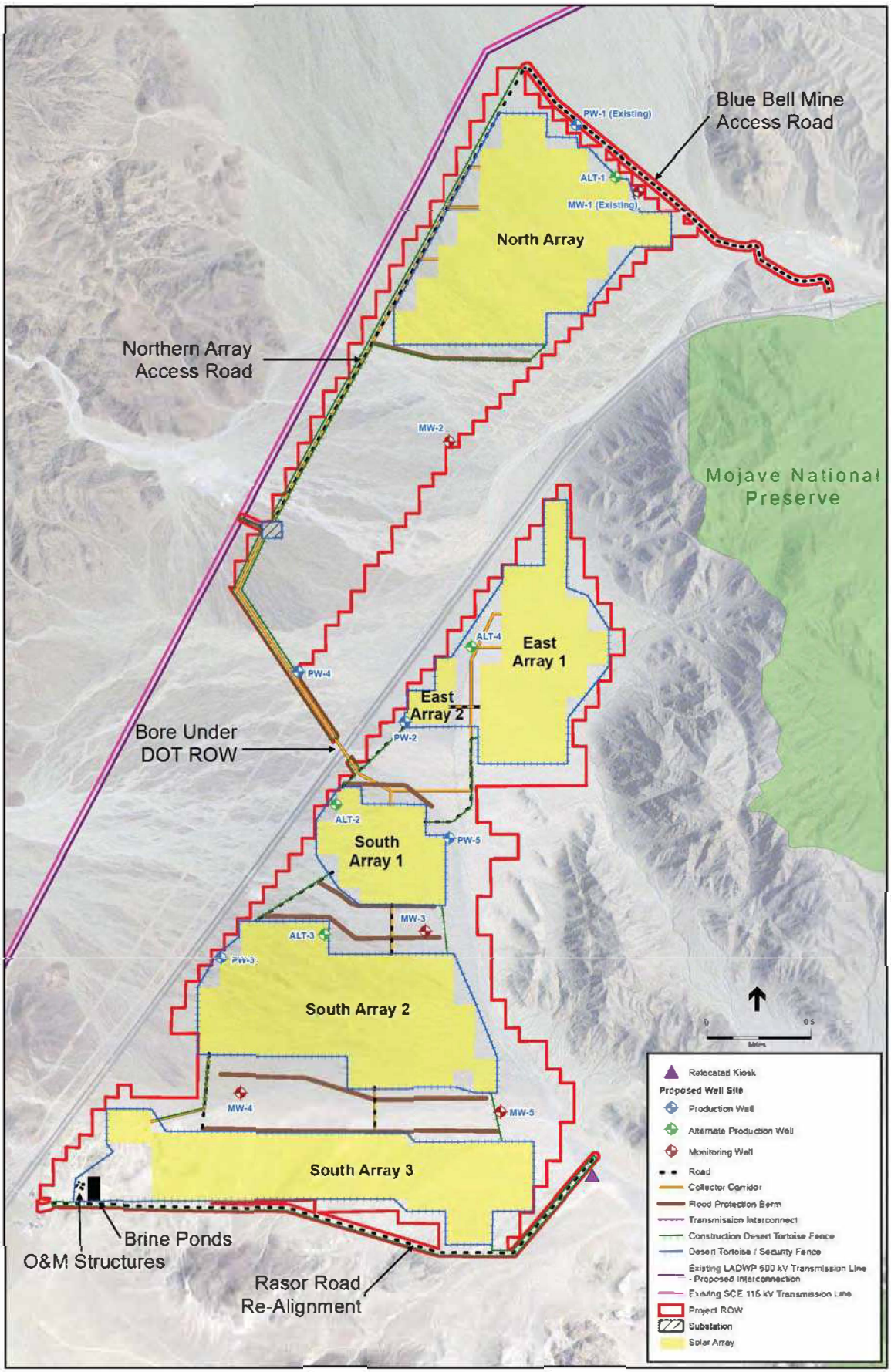
The No Project Alternative is considered the Environmentally Superior Alternative, as it would result in no direct or indirect impacts related to any environmental issues. CEQA Guidelines Section 15126.6(e)(2) requires that if the environmentally superior alternative is the "No Project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. For the reasons discussed in Section 4.6 above and as summarized in Table 2, the Reduced Building Size Alternative is considered the Environmentally Superior Alternative. When compared to the proposed project, the reduction in building size, reduction in construction activities, reduction in workforce and associated reduction of grading and earthwork within the building footprint area would reduce impacts related to aesthetics, biological resources, cultural resources, geology and soils, greenhouse gas emissions, energy, hazards and hazardous materials, hydrology and water quality, paleontological resources, noise and vibration, transportation, tribal cultural resources, and utilities and service systems.



SOURCE: Panorama Environmental Inc., 2013; BLM, 2012

Soda Mountain Solar Project

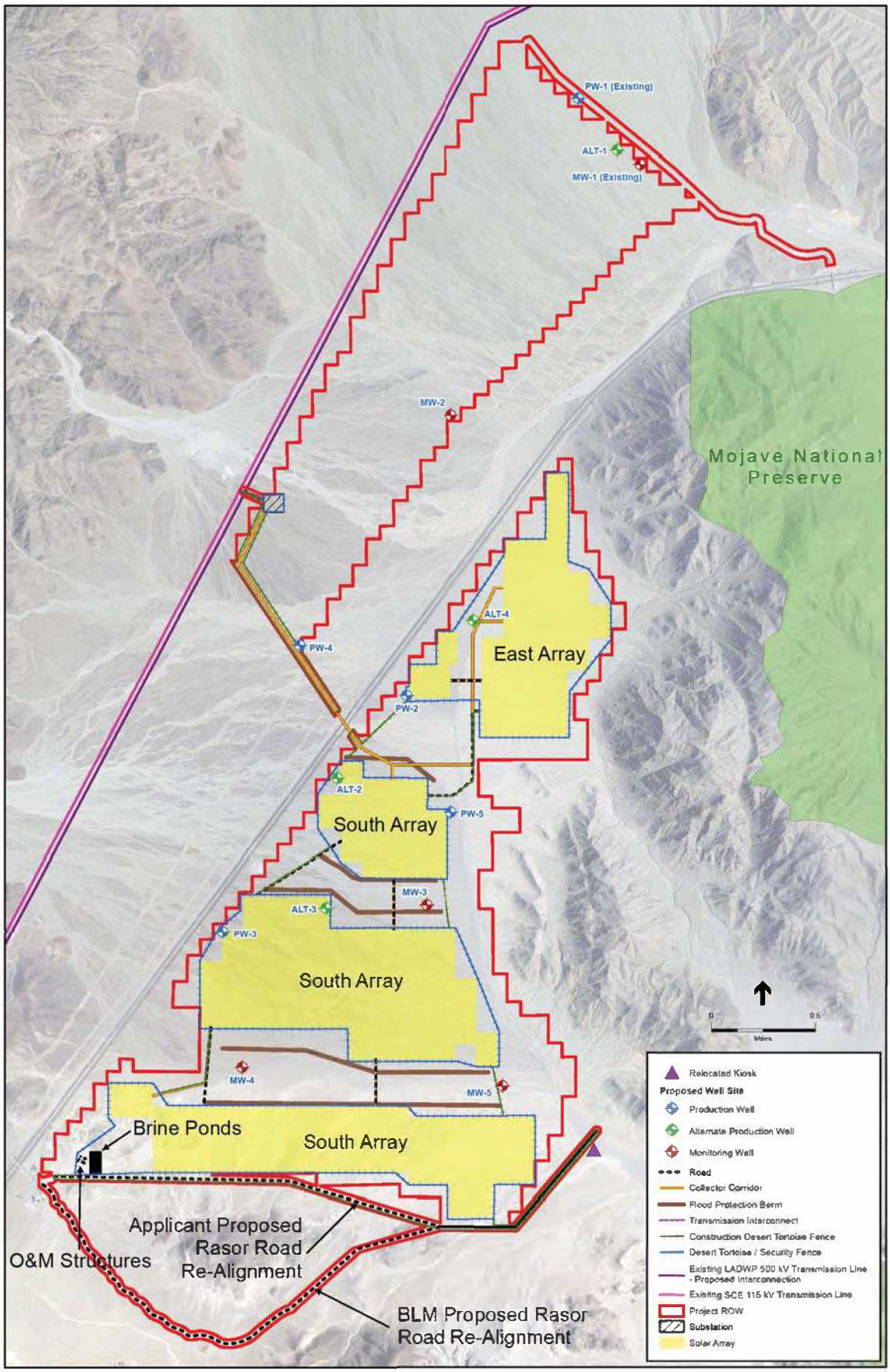
Figure 1
Potential Private Land Alternative



SOURCE: Panorama Environmental Inc., 2013

Soda Mountain Solar Project

Figure 2
Proposed Project



SOURCE: Panorama Environmental Inc., 2013

Soda Mountain Solar Project . 120592

Figure 3
Alternative B

Attachment 1

February 9, 2025

Mr. Drew Bohan

Executive Director

California Energy Commission

715 P Street, Sacramento, CA 95814

SUBJECT: DETERMINATION OF INFEASIBILITY FOR CEC DATA REQUEST BIO-20, SODA MOUNTAIN SOLAR PROJECT (24-OPT-03)

Dear Mr. Bohan,

Thank you for your letter titled "*Determination of Incomplete Application and Request for Information for the Soda Mountain Solar Project (24-OPT-03)",* issued on September 3, 2024. The following letter provides a detailed analysis and response regarding Data Request (DR) BIO-20, which requested an assessment of the feasibility of a 0.25-mile buffer from areas with 10% slope. This has been determined infeasible to implement as both a project alternative or mitigation measure. Implementing a 0.25-mile buffer as an alternative or mitigation measure would prevent the project from attaining most of the basic project objectives. Additionally, there are specific economic, legal, environmental, social, and technological factors that make implementing a 0.25-mile buffer infeasible as a project alternative or mitigation measure. This letter describes these conflicts with the basic project objectives and outlines the specific factors that result in a determination of infeasibility. All other data requests within the September 3, 2024 letter have been deemed feasible to implement.

1. INTRODUCTION

DR BIO-20 requests an assessment of feasibility of a 0.25-mile buffer from areas with 10% slope to address potential impacts to desert bighorn sheep (*Ovis canadensis nelsoni*). This request is based upon information contained within Opt-In Application (24-OPT-03) Appendix D2 Desert Bighorn Sheep Study (TN 257948), which was completed by the California Department of Fish and Wildlife (CDFW). Implementation of a 0.25-mile buffer would result in a project footprint reduction of 236 acres, or approximately 12% of the project footprint, when compared to the proposed project submitted in the Opt-In Application for the Soda Mountain Solar Project (24-OPT-03). Please see Table 1 and Figure 1.

This letter also addresses information provided by Christina Aiello and Clinton Epps within a report titled "Potential impacts of the proposed Soda Mountain Solar development on desert bighorn sheep" (TN 261255), herein referred to as Aiello Report. The recommendations contained within the Aiello Report request the project implement a 1.24-mile buffer between the project components and bighorn sheep habitat. Implementation of this recommendation results in a buffer covering the entire project site and would effectively prohibit any project components from being constructed. See Figure 2. As discussed below in Section 4, there is insufficient evidence to support the determination that the implementation of a 0.25-mile buffer, or any larger buffer, would substantially lessen any of the project's impacts to desert bighorn sheep, beyond the measures the project is currently proposing to implement to reduce such impacts. Further, since the project's already-applied measures are sufficient to reduce the impacts to desert bighorn sheep to less than significant, consideration of additional measures – whether as mitigation or alternatives – is not warranted or proper.

It is also important to note that the Applicant's preferred project would construct a 2,558-acre renewable energy development, not the 2058.97-acre project proposed within Opt-In Application (24-OPT-03). The Applicant's preferred project was presented to the Bureau of Land Management (BLM) in 2015. The project footprint was subsequently reduced by 500 acres, or 20%, by BLM, in consultation with other regulatory agencies, during the BLM's approval process in order to address impacts to desert bighorn sheep. Therefore, the project presented within Opt-In Application (24-OPT-03) already provides a significant reduction in the original project footprint, specifically made to reduce impacts to desert bighorn sheep. When compared to the Applicant's preferred project, implementation of a 0.25-mile buffer from areas with 10% slope would result in a reduction of 736 acres, or a 33% total reduction in project footprint.

Table 1. Project Footprint Reduction with Implementation of a 0.25-Mile Buffer

Project Component	**2015 Applicant Preferred Project Footprint**	**Opt-In Application 24-OPT-03 Project Footprint**	**Project Footprint Reduction from Implementation of 0.25-Mile Buffer**	**Remaining Project Footprint after Implementation of 0.25-Mile Buffer**
(in acres)				
North Array	500	0	--	--
East Array	341.67	341.67	151.7	189.97
South Array 1	205.58	205.58	2.23	203.35
South Array 2	632.04	632.04	8.69	623.35
South Array 3	326.64	326.64	8.32	318.32
Total Impact Area	2558.97	2058.97	236.01	1822.96
Source: SWCA Environmental Consultants 2025				

Implementation of a 0.25-mile buffer from areas with 10% slope would reduce the project's 300 MW solar energy generation capacity and 300 MW battery energy storage capacity by at least 12%. It is important to note that the reduction in project footprint size due to implementation of a 0.25-mile buffer may not result in a linear reduction in the project's energy generation and storage capacity. In other words, a 12% reduction in the project footprint could result in a reduction in the project's energy generation and storage capacity of much greater than 12%. This is because the project contains civil design features such as roads, fences, and basins, and moving these project components would lead to an even greater reduction to the solar field and BESS size than the 236-acre reduction from buffer implementation.

2. PROJECT OBJECTIVES

The primary goal of the project proposed within Opt-In Application (24-OPT-03) is to contribute to the achievement of California's renewable energy goals and create a vital new point of interconnection for renewable energy in San Bernardino County to connect to California's electric transmission infrastructure. There are 7 specific project objectives for the project. The discussion below identifies how implementation of a 0.25-mile buffer would be in direct conflict with the proposed project's objectives and would impede the project from attaining the project's objectives.

Project Objective 1: Assist the State of California in achieving or exceeding its Renewables Portfolio Standard and greenhouse gas emissions reduction objectives by developing and constructing new California Renewables Portfolio Standard–qualified solar power generation facilities producing approximately 300 MW.

The Renewables Portfolio Standard (RPS) is one of California's key programs for advancing renewable energy. The program sets continuously escalating renewable energy procurement requirements for the

State's load-serving entities. The RPS requires all load-serving entities in California to procure an increasing portion of their electricity sales from eligible renewable resources. Senate Bill (SB) 1078, passed in September 2002, set the RPS of 20% total renewables generation by 2020.

- SB 107, passed in September 2006, accelerated achievement of the 20% RPS to 2010.
- SB X1-2, signed in April 2011, raised the RPS goal to 33% in 2020.
- SB 350, signed in 2015, increased the RPS goal to 50% in 2030.
- SB 100, signed into law in September 2018, revised the RPS goal to 60% by 2030 and set a long-term target of 100% carbon-free energy by December 31, 2045.

Electricity generated by the project would be used to serve the needs of California customers and would facilitate compliance with California's RPS. The project would assist the State in achieving its energy objectives under SB 100 and SB 350 and greenhouse gas emissions–reduction goals under Assembly Bill 32. The project would advance the goals of the State to reduce use of fossil fuels and increase the availability of electricity from solar energy, which is eligible for compliance with the RPS.

Implementing a 0.25-mile buffer from areas with 10% slope as an alternative or mitigation measure would result in a significant direct loss of renewable energy generation. When compared to the Applicant's preferred project, implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 736 acres, or 33% of the total project footprint. When compared to the project proposed within Opt-In Application (24-OPT-03), implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 236 acres or 12%. This reduction would prevent the project from producing 300 MW of solar energy and would directly conflict with the project objective to transition the State to renewable energy and meeting RPS targets by providing 300 MW of RPS-qualified solar energy generation facilities. This loss of solar energy generation would also impact the State's ability to maintain electrical system reliability under this transition and during extreme climate change driven events. Therefore, implementation of a 0.25-mile buffer from areas with 10% slope as a project alternative or mitigation measure would impede the project from attaining project objective #1.

Project Objective 2: Produce and transmit electricity at a competitive cost.

Economies of scale allow for cost advantages when building large-scale renewable energy developments. It is more cost effective to construct one large project to produce 300 MW of renewable energy, than constructing multiple smaller projects to cumulatively produce 300 MW of renewable energy. Solar panels, inverters and other components are more cost competitive when bought in large quantities, lowering the overall project cost. Fixed cost distribution such as interconnection facilities, permitting, design, land acquisition and project management are spread across a larger number of watts generated in a large-scale project, lowering the cost per watt. Energy capture is also subject to economies of scale and cost savings for rate payers can be maximized by utilizing an optimal land layout and panel orientation. Large utility-scale solar projects can be better integrated into the electrical grid, potentially reducing transmission losses and providing more predictable power output. The most significant fixed cost is associated with the new high-voltage interconnection facilities required by LADWP. Which are currently estimated to cost over $60 million dollars. These costs remain the same even if the project size and energy generation are greatly reduced, thus making a significant reduction in project size particularly harmful to the project's ability to sell power cheaply.

Last, a reduction in footprint due to implementation of a 0.25-mile buffer from areas with 10% slope may not result in a linear reduction in project size, and ensuing energy generation loss could be far greater than 12% or 236 acres. This is because the project area being reduced by implementation of a 0.25-mile buffer contains civil design features such as roads, fences and basins, and re-arranging these project components would lead to an even greater reduction to the solar field and BESS size than the 236-acre reduction from buffer implementation.

For the reasons above, implementing a 0.25-mile buffer from areas with 10% slope would cause a significantly more expensive project and impair the Applicant's ability to sell power more cheaply on the wholesale market or to LADWP directly. Therefore, implementation of a 0.25-mile buffer as a project alternative or mitigation measure would directly impact the project's ability to save California ratepayers money and would impede the project from attaining project objective #2.

Project Objective 3: Provide a new source of energy storage that assists the State in achieving its energy storage mandates.

Implementation of the proposed project supports a significant number of energy storage mandates. The Desert Renewable Energy Conservation Plan (DRECP) is a landscape-scale renewable energy and conservation planning effort covering more than 22 million acres in the California desert. The project site is within the California Desert Conservation Area (CDCA), which is amended by the Bureau of Land Management (BLM) DRECP Land Use Plan Amendment (BLM 2016). The project site is within an area designated as a Development Focus Area (DFA). DFAs are locations where renewable energy generation is an allowable use, incentivized, and could be streamlined for approval under the DRECP.

The project site is within the BLM's California Desert District (within the jurisdiction of the Barstow Field Office), the planning boundary of the CDCA Plan, and the DRECP. The project would be consistent with federal goals for the construction of renewable energy infrastructure and generation of renewable energy and would make the best use of public lands to generate, store, and transmit affordable renewable solar electricity for distribution to the State.

Within the State of California, implementation of the project supports the Energy Action Plan and Loading Order, which established a high-level, coherent approach to meeting California's electricity and natural gas needs and set forth the "loading order" to address California's future energy needs. The "loading order" established that the State, in meeting its energy needs, would invest first in energy efficiency and demand-side resources, followed by renewable resources, and only then in clean conventional electricity supply. Since that time, the California Public Utilities Commission and California Energy Commission have overseen the plans, policies, and programs for prioritizing the preferred resources, including energy efficiency and renewable energy.

Electricity from the project would be used to serve the needs of California customers and would facilitate compliance with California's RPS. The project would assist the State in achieving its energy objectives under SBs 100 and 350 and greenhouse gas emissions–reduction goals under Assembly Bill 32. The project would advance the goals of the State to reduce use of fossil fuels and increase the availability of electricity from solar energy, which is eligible for compliance with the RPS.

When compared to the Applicant's preferred project, implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 736 acres, or 33% of the total project footprint. When compared to the project proposed within Opt-In Application (24-OPT-03), implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 236 acres or 12%. This reduction would prevent the project from producing 300 MW of solar energy and would directly conflict with the project objective of advancing the energy storage mandates. The reduction in energy generation would reduce the amount of solar energy that would flow into the BESS and would require the BESS facility to be downsized in the same proportion as the solar field. A downsized solar energy system would not generate sufficient energy to charge a BESS of 300 MW, and the implementation of a 0.25-mile buffer would result in a direct reduction in energy storage capacity. This loss of energy storage would negatively impact the State's ability to accelerate a transition to renewable energy and would negatively impact the State's ability to maintain electrical system reliability under this transition and during extreme climate change driven events. Therefore, implementation of a 0.25-mile buffer from areas with 10% slope as a project alternative or mitigation measure would impede the project from attaining project objective #3.

Project Objective 4: Use the existing transmission unused capacity that provides approximately 300 MW of capacity.

The power produced by the project would be conveyed to the regional electrical grid through an interconnection with the existing Marketplace-Adelanto 500-kilovolt (kV) transmission line operated by the Los Angeles Department of Water and Power (LADWP). Transmission is critical to ensuring grid reliability and resilience, particularly as the state faces extreme weather events caused by climate change. According to the California ISO Transmission Plan, the need for new energy generation over the next 10 years has escalated rapidly, driving an accelerated pace for new transmission development. The combination of dramatically increasing the pace of renewable generation and load forecast growth are driving an increase in transmission requirements. To meet the State's renewable energy goals, an expanded, upgraded and reinforced transmission system is required.

The proposed project does not require the construction of new off-site transmission infrastructure and instead maximizes the use of existing infrastructure that is currently underutilized and directly adjacent to the project site. When compared to the Applicant's preferred project, implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 736 acres, or 33% of the total project footprint. When compared to the project proposed within Opt-In Application (24-OPT-03), implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 236 acres or 12%. This reduction in project footprint would prevent the project from producing 300 MW of solar energy and 300 MW of energy storage, and would directly conflict with the project objective of maximizing the utilization of the existing transmission line's unused capacity of 300 MW. Therefore, implementation of a 0.25-mile buffer from areas with 10% slope as a project alternative or mitigation measure would impede the project from attaining project objective #4.

Project Objective 5: Utilize existing energy infrastructure to the extent possible by locating solar power generation facilities near existing infrastructure, such as electrical transmission facilities.

The project proposes a large-scale solar and battery storage facility within an area that contains existing infrastructure, including the existing Marketplace-Adelanto 500 kV transmission line operated by the LADWP. Although reducing the project footprint would still allow for the remaining project components to connect to the existing energy infrastructure, reducing the project's energy generation capabilities would not maximize the existing energy infrastructure in the project area. The existing Marketplace-Adelanto 500 kV transmission line has the capacity to handle an additional 300 MW of energy, which would be generated by the project.

The project has an existing executed Interconnection Agreement for 300 MW of capacity with LADWP. A significant reduction in size caused by implementing a 0.25-mile buffer from areas with 10% slope is prohibited under the current interconnection agreement and would trigger a "material modification process" with LADWP, further causing re-study and amendment of the Agreement. Such a process causes significant unknowns related to study timing, future costs and project schedule, and until resolved would impede the financial investment necessary to advance the project development and construction. Every action for this project that is not consistent with the existing LADWP Agreement requires 11 approvals from all members of the Mead-Adelanto Project leading to significant additional time beyond normal interconnection processes. Implementation of a 0.25-mile buffer from areas with 10% slope would result in an anticipated freeze on the project advancement of a minimum of 18 months. This potential delay would prevent the project from being capable of being accomplished within a reasonable period of time and is therefore infeasible.

When compared to the Applicant's preferred project, implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 736 acres, or 33% of the total project

footprint. When compared to the project proposed within Opt-In Application (24-OPT-03), implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 236 acres or 12%. This reduction would prevent the project from producing 300 MW of solar energy and the reduced production of energy at this project site would have to be made up by installing solar panels at another site. Thus, the effect of implementing a 0.25-mile buffer from areas with 10% slope would be to preclude the utilization, to the extent possible, of the existing infrastructure adjacent to the project site. This consequence would directly conflict with the project objective of utilizing existing transmission infrastructure. Therefore, implementation of a 0.25-mile buffer from areas with 10% slope as a project alternative or mitigation measure would impede the project from attaining project objective #5.

Project Objective 6: Site solar power generation facilities in areas of San Bernardino County that have the best solar resource to maximize energy production and the efficient use of land.

The project site is located within a designated federal Section 368 Energy Corridor adjacent to I-15 (Corridor number 27-225). Additionally, an existing Southern California Edison (SCE)-owned 115 kV sub transmission line and an LADWP-operated 500 kV transmission line run parallel to and adjacent to the western perimeter of the project site. The project site is located immediately adjacent to existing roadways that provide readily available access for construction and operations. The project site was selected to maximize energy production and the most efficient use of land, considering existing infrastructure, site geology, environmental impacts, water, waste and fuel constraints and electric transmission constraints.

The State has prepared the DRECP, a multi-agency effort to develop a comprehensive habitat conservation plan with streamlined federal permitting for renewable energy projects on 22 million acres of State and federally owned public land. The DRECP is a collaborative effort between the California Energy Commission, California Department of Fish and Wildlife, the U.S. Bureau of Land Management, and the U.S. Fish and Wildlife Service, also known as the Renewable Energy Action Team. San Bernardino County is one of seven counties participating in this effort. The DRECP establishes mitigation and conservation measures that renewable energy projects could implement for desert habitat and species impacts. The DRECP focuses on renewable energy projects on State and federally owned land, as well as on projects that require federal permitting as a result of impacts to certain species and habitat. Although the project is located entirely within BLM lands that are not under the jurisdiction of the County of San Bernardino, the project has been developed in a manner that is consistent with the requirements of the County and has involved the County in its review.

The proposed project is located within the DRECP area of the County of San Bernardino and was sited in this area in an effort maximize energy production while efficiently using land. When compared to the Applicant's preferred project, implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 736 acres, or 33% of the total project footprint. When compared to the project proposed within Opt-In Application (24-OPT-03), implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 236 acres or 12%. This reduction would prevent the project from producing 300 MW of solar energy. A reduction in the project footprint could result in a separate project being proposed elsewhere within the County to fully meet energy production goals. This would directly conflict with the project objective of siting solar power generation facilities in areas of San Bernardino County that have the best solar resource to maximize energy production while efficiently using of land. Therefore, implementation of a 0.25-mile buffer from areas with 10% slope as a project alternative or mitigation measure would impede the project from attaining project objective #6.

Project Objective 7: Develop a solar power generation facility in San Bernardino County that would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

A Socioeconomic study was completed for the project and is included as Appendix P (TN #259903) within Opt-In Application (24-OPT-03). As stated in this study, construction of the project would provide a

temporary increase in employment of approximately 200 direct and another 420 indirect and induced jobs. Long-term (30-years or longer) employment growth derived from the operation of the project is estimated at up to 49 jobs per year. The project would provide economic benefits to the County of San Bernardino and to its residents and businesses by increasing spending in the community as a result of construction and development-related work. It would provide opportunities for local tradespeople to develop their skills and gain experience installing solar and battery storage facilities and would reduce the amount of time that many of these people spend commuting by offering a local job opportunity. It also would provide increased sales and use taxes, personal property tax, and possessory interest property tax revenues to the County over many years.

When compared to the Applicant's preferred project, implementing a 0.25-mile buffer would result in a reduction to the total project footprint of 736 acres, or 33% of the total project footprint. When compared to the project proposed within Opt-In Application (24-OPT-03), implementing a 0.25-mile buffer would result in a reduction to the total project footprint of 236 acres or 12%. The reduction in project footprint would reduce construction and operational jobs, project taxes, and associated local economic benefits to the County and local businesses. Therefore, implementation of a 0.25-mile buffer from areas with 10% slope as a project alternative or mitigation measure would impede the project from attaining project objective #7.

3. ECONOMIC AND LEGAL FACTORS

Reduction of the project footprint would result in a financial burden that would significantly hinder the project's viability and the economic benefits to the community. Practical limitations, such as direct conflicts with legal agreements contained within the LADWP Interconnection Agreement and Facilities Studies, create an infeasible scenario for reducing the project footprint.

The project has an existing executed Interconnection Agreement for 300 MW of capacity with LADWP. A significant reduction in size caused by implementing a 0.25-mile buffer from areas with 10% slope would be prohibited under the current agreement and would result in the triggering of a "material modification process" with LADWP, further causing re-study and amendment of the Agreement. Such a process causes significant unknowns related to study timing, future costs and project schedule, and until resolved would impede the financial investment necessary to advance the project development and construction. Every action for this project that is not consistent with the existing LADWP Interconnection Agreement requires 11 approvals from all members of the Mead-Adelanto Project leading to significant additional time beyond normal interconnection processes. Implementation of a 0.25-mile buffer from areas with 10% slope would result in an anticipated freeze on the project advancement of a minimum of 18 months. This potential delay would prevent the project from being capable of being accomplished within a reasonable period of time and is therefore infeasible.

Implementing a 0.25-mile buffer from areas with 10% slope may also result in a breach of the LADWP Agreement that could result in a termination of this agreement, which has significant economic consequences and creates a situation that makes implementing a 0.25-mile buffer infeasible. It is also expected that implementation of a 0.25-mile buffer from areas with 10% slope would result in a higher cost per watt for the project by not maximizing economies of scale. Economically, a reduction in the project footprint would also significantly reduce the living wage jobs that would be provided during project construction and operation. This would result in a direct reduction in the economic benefits of the project to the County and its residents by decreasing spending in the community as a result of construction and development-related work. The reduction in project footprint would reduce the direct and indirect economic benefits of the project, including reducing labor costs, contractor's profit and overhead, sales and use taxes, personal property tax, and possessory interest tax revenues to the State of California and County of San Bernardino. The total fiscal benefit to the County and State from implementation of the project would be substantially reduced with implementation of a 0.25-mile buffer from areas with 10% slope.

4. ENVIRONMENTAL FACTORS

There is insufficient evidence to support the determination that the implementation of a 0.25-mile buffer from areas with 10% slope would substantially lessen any of the project's impacts to desert bighorn sheep, beyond the measures the project is currently proposing to implement to reduce such impacts. Further, since those already-applied measures are sufficient to reduce the impacts to desert bighorn sheep to less than significant, consideration of additional measures – whether as mitigation or alternatives – is not warranted.

The project currently proposes to implement a significant number of project design features, applicant proposed measures and mitigation measures to sufficiently reduce any potential direct, indirect, cumulative, short-term or long-term project impacts to desert bighorn sheep. These measures are identified in Attachment A. The Applicant has considered and agreed to all of these mitigation measures, which are considered feasible and will be adopted as part of the project's environmental commitment through the mitigation monitoring and reporting program (MMRP). With implementation of the currently proposed avoidance and minimization measures, the project's direct, indirect, cumulative short-term and long-term project impacts to desert bighorn sheep movement would be less than significant.

DR BIO-20 is a request to implement a 0.25-mile buffer from areas with 10% slope that was based upon a recommendation within Appendix D2 Desert Bighorn Sheep Study (TN 257948). This recommendation was based upon an analysis of a total of 261,868 desert bighorn sheep data tracking points. Of the 261,868 data points analyzed, 30 points were determined as located within the proposed project site. The analysis within the Desert Bighorn Sheep Study identified that only 0.01% of the total desert bighorn sheep movement in the region utilize the project site. When compared to the Applicant's preferred project, implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 736 acres, or 33% of the total project footprint. When compared to the project proposed within Opt-In Application (24-OPT-03), implementing a 0.25-mile buffer from areas with 10% slope would result in a reduction to the total project footprint of 236 acres or 12%. A 0.25-mile buffer from areas with 10% slope to reduce the proposed project footprint by 236 acres to address movement of 0.01% of desert bighorn sheep appears to be out of scale and not proportional to any potentially direct or indirect impacts caused by the project.

Further, the proposed project site does not contain high quality habitat for the desert bighorn sheep. As stated within Appendix D2 Desert Bighorn Sheep Study (TN 257948), desert bighorn sheep spend most of their time in mountain habitat, as it is visually open, allowing for early predator detection, and it provides escape terrain in the form of steep, generally rocky, slopes. Mountain habitat is defined as a slope of 15% or greater. The project site is primarily flat and contains a large desert wash habitat. It is not considered mountain habitat and does not contain the highest quality habitat for desert bighorn sheep. As stated in Appendix D2 Desert Bighorn Sheep Study (TN 257948), it is unlikely the onsite habitat would experience frequent and heavy use by desert bighorn sheep. A 0.25-mile buffer from areas with 10% slope to reduce the proposed project footprint by 236 acres in an area that does not contain high quality habitat appears to be out of scale and not proportional to any potentially direct or indirect impacts caused by the project.

Further, Appendix D2 Desert Bighorn Sheep Study (TN 257948), performed wildlife linkage and connectivity modeling and identified that the project site is not within a designated area of importance. The Study states that while there are four existing underpasses and bridges near the Soda Mountain Solar study area, there have been few documented observations of desert bighorn sheep using these structures. The wildlife crossings of importance to the species are off-site to the north and south. A 0 a 0.25-mile buffer from areas with 10% slope to reduce the proposed project footprint by 236 acres in an area that does not contain data supporting that the site is used as a critical wildlife corridor for desert bighorn sheep appears to be out of scale and not proportional to any potentially direct or indirect impacts caused by the project.

Lastly, Appendix D2 Desert Bighorn Sheep Study (TN 257948) states that desert bighorn sheep are highly influenced by the location of, and distance to, reliable water sources, particularly during the hot, summer

months. There are no reliable water sources for desert bighorn sheep on the project site. Aquatic resources include prominent and non-prominent drainages that encompass a desert wash system. The request to reduce the proposed project footprint by 236 acres, in an area that does not contain any significant water sources for desert bighorn sheep, appears to be out of scale and not proportional to any potentially direct or indirect impacts caused by the project.

The recommendations contained within the Aiello Report request the project implement a 1.24-mile buffer between the project components and bighorn sheep habitat. Implementation of this recommendation results in a buffer covering the entire project site and would effectively prohibit any project components from being constructed. See Figure 2. The buffer requests within the Aiello Report are disproportionally large and there is insufficient evidence to support the determination that the implementation of any buffer would substantially lessen any of the project's impacts to desert bighorn sheep. The Aiello Report fails to account for the significant number of applicant proposed measures and mitigation measures (Attachment A) that are required to be implemented by the project to sufficiently reduce any potential direct, indirect, cumulative, short-term or long-term project impacts to desert bighorn sheep. The Aiello Report also fails to account for the 500-acre reduction in project footprint that has already occurred to reduce project impacts related to bighorn sheep. The data presented within the Aiello Report specifically states that the project site is considered irregularly used habitat by the bighorn sheep. It also discloses that there is limited data to draw on regarding impacts of the project related to bighorn sheep, and the recommendations within the report appear to be based upon a project-specific modeling simulation that has not undergone peer review. There is insufficient data provided to support the concept that this model provides an unbiased, accurate and reliable analysis of the project site. Instead, it appears the information presented within the Aiello Report supports the determination that the project site does not support bighorn sheep movement, nor does it contain high quality bighorn sheep habitat. For example, Table 1 within the Aiello Report identifies that the simulation (performed by the non-peer reviewed model and based on unknown assumptions that are higher than documented collaring data) results in only 126 acres of the total 2,435 acres of the project site being considered "frequently" used by bighorn sheep. This represents 5% of the total project site being "frequently" used by bighorn sheep. This 5% is based upon assumptions that are not clearly outlined and contradicts the actual data tracking results which identified that only 0.01% of the total desert bighorn sheep in the region utilize the project site. The Aiello Report requests the CEC requires the project implement a 1.24 mile buffer for bighorn sheep, which would effectively prohibit any project components from being constructed. The request for a buffer covering the entire project site when only 5% of the project site was modeled as "frequently" used, is out of scale and not proportional to any potentially direct or indirect impacts caused by the project.

5. SOCIAL FACTORS

Reducing the project footprint would also reduce the socioeconomic benefits of the project, including employment for local residences and sources of income through the direct and indirect employment opportunities identified within the project's Socioeconomic Study (Appendix P TN #259903). A reduction in the project footprint would substantially reduce the project's ability to help provide a reliable local source of renewable power that would minimize power outages and disruptions by reducing rolling blackouts during peak demand periods.

6. TECHNOLOGICAL FACTORS

The proposed project is a large-scale infrastructure project that utilizes state-of-the-art solar energy generation and battery energy storage technology. The project site was selected because it is located directly adjacent to existing large scale infrastructure projects – including the I-15, Brightline West high speed rail project and existing transmission lines. The project offers a model for safely locating solar and battery energy storage facilities far away from residential areas, clustered adjacent to dense infrastructure projects, and connecting to underutilized transmission lines, which prevents the need for new transmission lines to be constructed in wilderness or populated areas. Reducing the project footprint reduces the project's

capability for maximizing technology in an effort to build environmentally friendly solar and battery storage developments.

7. CONCLUSION

Implementing a 0.25-mile buffer from areas with 10% slope as an alternative or mitigation measure would prevent the project from attaining most of the basic project objectives. Additionally, there are specific economic, legal, environmental, social, and technological factors that make implementing a buffer infeasible as a project alternatives or mitigation measure. Further, there does not appear to be sufficient evidence to support the determination that implementation of a buffer would substantially lessen any of the significant effects of the project related to desert bighorn sheep, beyond what the project is currently proposing to implement to reduce such impacts. Finally, implementing a buffer, whether as a mitigation measure or project alternative, is not warranted since the already-identified set of measures reduces the project's impacts on desert bighorn sheep to a less than significant level.

Although it is infeasible to implement a 0.25-mile buffer, if the CEC believes that the information and analysis provided by the Applicant is insufficient to reduce impacts to less than significant, there are other feasible mitigation measures that would be equivalent to or more effective than a 0.25-mile buffer from areas with 10% slope in avoiding and reducing significant effects to the desert bighorn sheep. These measures would require approval from BLM and CEC but would further reduce any potential direct and indirect impacts to desert bighorn sheep movement to at least the same degree, or to a greater degree, than a 0.25-mile buffer from areas with 10% slope, and could include:

- Providing onsite habitat enhancement north of I-15 on BLM lands not currently proposed for development
- Providing offsite habitat enhancement
- Paying in-lieu fees or establishing an in-lieu fee program for desert bighorn sheep research and monitoring
- Removing legacy fencing on nearby BLM or State lands to increase regional wildlife connectivity

It is requested that the CEC certify the Soda Mountain Solar Project with the project footprint as described within Opt-In Application (24-OPT-03). Implementation of a buffer is not a feasible alternative or feasible mitigation measure due to its direct conflicts with project objectives and other specific environmental, economic, legal, social, technological and other conditions. We thank you for your consideration in our request.

Sincerely,

Hannah Arkin

CEO, Resolution Environmental

REFERENCES

1. Aiello and Epps. Potential impacts of the proposed Soda Mountain Solar development on desert bighorn sheep. A report prepared for the National Park Service and California Department of Fish and Wildlife. Soda Mountain Solar CEC Docket TN 261255.
2. California Natural Gas Vehicle Coalition v. State Air Resources Board. Fifth Appellate District Decision (F084229). 8/27/24.
3. California Environmental Quality Act Statute and Guidelines. Public Resources Code 21000–21189 and California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387

4. California ISP 2021-2022 Transmission Plan March 17, 2022.
5. County of San Bernardino. General Plan. Renewable Energy and Conservation Element. February 2019.
6. Dudek. Desert Bighorn Sheep Study. Soda Mountain Solar Project. June 2024.
7. SWCA Environmental Consultants. Soda Mountain Solar Project Opt-In Application Section 3-6 Energy. 2024
8. SWCA Environmental Consultants. Soda Mountain Solar Project Opt-In Application Section 3-4 Biological Resources. 2024
9. SWCA Environmental Consultants. Soda Mountain Solar Project Opt-In Application Section 3-8 Greenhouse Gas Emissions. 2024

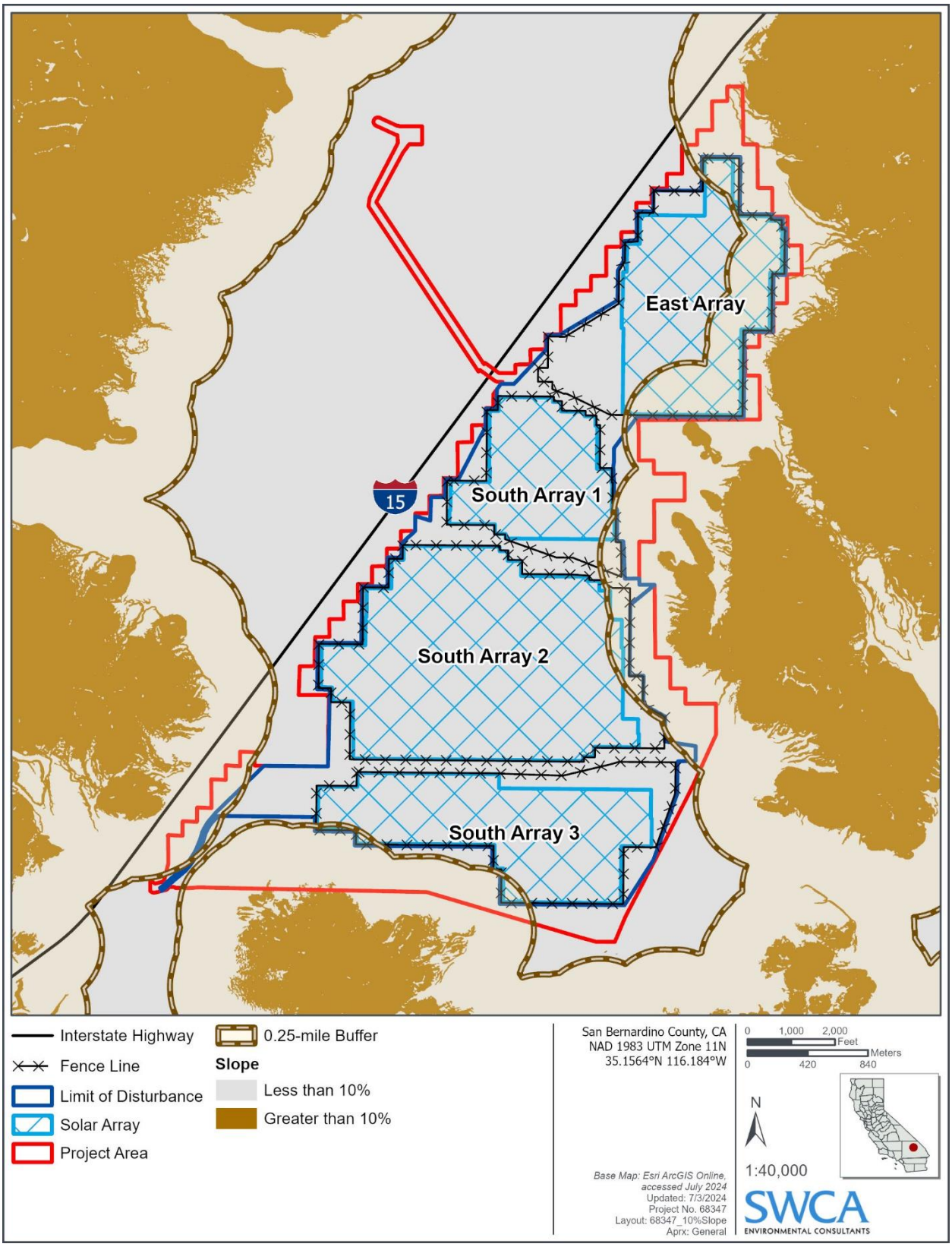
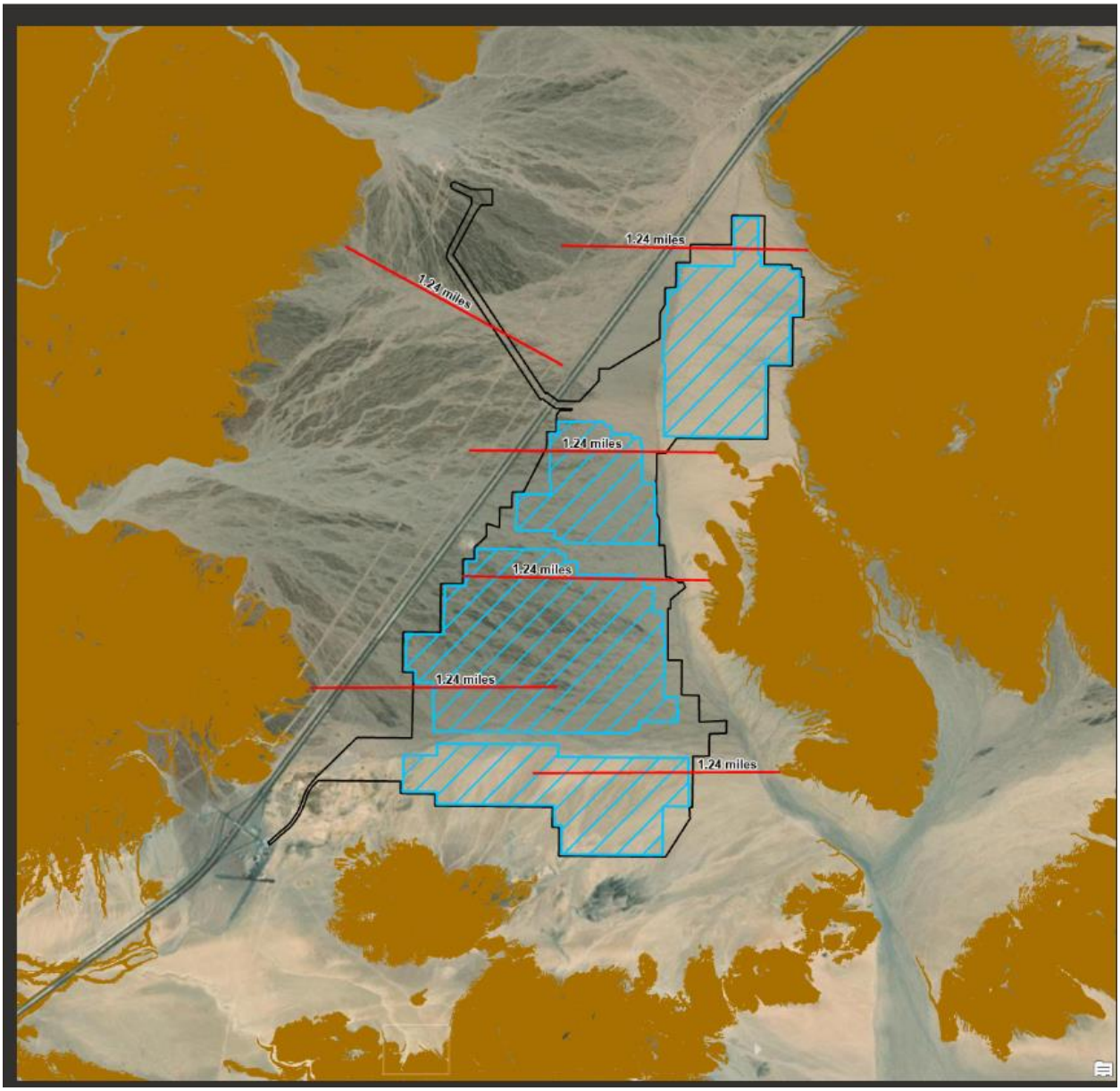


Figure 1. 0.25 mile buffer from 10% slope

Figure 2. 1.24 buffer from 10% slope



Attachment A

3.4.4.3 Applicant-Proposed Measures

The Applicant has identified and committed to implement the following APMs as part of the proposed Projects to avoid or substantially lessen potentially significant impacts to biological resources, to the extent feasible. The APMs, where applicable, are discussed in the impact analysis section below.

VEGETATION

APM BIO-1: The site shall be revegetated after decommissioning according to the Final Closure Plan described in MM BIO-29 and prepared in conformance with BLM requirements at the time of decommissioning.

APM BIO-2: The applicant shall prepare and implement a Vegetation Resources Management Plan that contains the following components:

- Vegetation Salvage Plans that discuss the methods that will be used to transplant cacti present within the proposed disturbance areas. Salvage and transplant methods used will be approved by the CEC. In addition, the Vegetation Salvage Plans will also include methods that will be used to transplant special-status plant species that occur within proposed disturbance areas.

- Restoration Plans discussing the methods that will be used to restore any of the four native plant community types (creosote bush-white bursage scrub, cheesebush scrub, and creosote bush scrub,) present within the project area that may be temporarily disturbed by construction activities. The applicant will obtain CEC approval for any seed mixtures used for restoration.
- Vegetation Salvage and Restoration Plans that will specify success criteria and performance standards. The applicant will be responsible for implementing the Vegetation Salvage and Restoration Plan according to CEC requirements.

APM BIO-3: Herbicides shall not be applied systemically over the entire project area. Herbicides shall be applied in focused treatments in areas where invasive weed infestations have been identified, such as where there is a clump or monotypic stand of invasive weeds. Herbicides shall not be applied within 100 feet of a special-status plant.

APM BIO-4: Only a State of California and federally certified contractor (i.e., Qualified Applicator), who is also approved by CDFW, and holds and maintains a Qualified Applicator License from California Department of Pesticide Regulation, shall be permitted to perform herbicide applications. Herbicides shall be applied in accordance with applicable laws, regulations, and permit stipulations. All herbicide applications must follow U.S. Environmental Protection Agency label instructions.

APM BIO-5: Herbicides shall not be applied during rain events, within 48 hours of a forecasted rain event with a 50% or greater chance of precipitation, or when wind velocity exceeds 10 mph (for liquids) and 15 mph for granular herbicides.

APM BIO-6: The applicant shall implement an Integrated Weed Management Plan (IWMP) to control weed infestations and the spread of noxious weeds in the study area.

APM BIO-7: After project construction, areas of temporary disturbance shall be closed and the restoration measures in the Vegetation Resource Management Plan shall be implemented.

APM BIO-8: Foundations shall be removed to a minimum of 3 feet below surrounding grade during decommissioning and covered with soil to allow adequate root penetration for native plants. Petroleum product leaks and chemical releases shall be remediated prior to completion of decommissioning.

APM BIO-9: Decommissioning methods shall minimize new site disturbance and removal of native vegetation.

SPECIAL-STATUS PLANTS

APM BIO-10: All special-status and rare plant (CRPR 1, 2, 3, and 4) occurrences within the project area will be documented during preconstruction surveys. The applicant will also provide a 100-foot buffer area surrounding each avoided occurrence in which no construction activities will take place, if feasible. If avoidance is not feasible, the applicant shall provide on-site mitigation (e.g., vegetation salvage) for impacts to special-status and rare plants.

APM BIO-11: Before construction of a given phase begins, the applicant shall stake and flag the construction area boundaries, including the construction areas for the solar arrays and associated infrastructure; construction laydown, parking, and work areas; and the boundaries of all temporary and permanent access roads. A CEC-approved biologist shall then survey all areas of proposed ground disturbance for rare or special-status plant species and cacti during the appropriate period (blooming or otherwise identifiable) for those species having the potential to occur in the construction areas. All rare or special-status plant species and cacti observed shall be flagged for transplantation.

SPECIAL-STATUS WILDLIFE

APM BIO-12: The applicant shall implement a Worker Environmental Awareness Program (WEAP) to educate workers about the environmental issues associated with the project and the MMs that will be implemented at the site, including nest awareness and non-disturbance exclusion zones.

APM BIO-13: Preconstruction clearance surveys to identify active bird nests shall be conducted within 2 weeks of ground disturbance or vegetation removal in all active work areas during the breeding season (February 1–August 31). The work area will need to be resurveyed following periods of inactivity of 2 weeks or more. Active nests shall be avoided using non-disturbance buffer zones as shown below.

- Avian Awareness and Baseline Non-Disturbance Buffer Zones
- Starting Distance of Awareness or Type Non-Disturbance Exclusion Zones Passerines 300 feet from active nest Raptors 500 feet from active nest Golden Eagles 1 mile and line of sight from active nest Burrowing 250 feet from active burrows during nesting Owls1 season (February 1–August 31) 160 feet from active burrows during the wintering period (September 1–January 31)
- Implementation Notes: A qualified biologist may reduce or increase the buffer distance if there is sufficient evidence based on species, habitat, and other factors, that applicant activity would not impact nesting activity. Buffers would be maintained until a qualified biologist has determined that the nest is no longer active.

APM BIO-14: Monitoring of any active nests within or adjacent to the work areas shall be conducted until nestlings have fledged and dispersed. Ongoing breeding-season monitoring of work areas shall be conducted throughout the duration of construction. Nest monitoring results shall be recorded in a Nest Check Form. Typically, a nest check will have a minimum duration of 30 minutes, but it may be longer or shorter, or more frequent than one check per day, as determined by the Designated Biologist (see MM BIO-7 for Designated Biologist) based on the type of construction activity (duration, equipment being used, potential for construction-related disturbance) and other factors related to assessment of nest disturbance (weather variations, pair behavior, nest stage, nest type, species, etc.). The Designated Biologist shall record the construction activity occurring at the time of the nest check and note any work exclusion buffer in effect at the time of the nest check. Non-project activities in the area should also be recorded (e.g., adjacent construction sites, roads, commercial/industrial activities, recreational use, etc.). The Designated Biologist shall record any sign of disturbance to the active nest, including but not limited to parental alarm calls, agitated behavior, distraction displays, nest fleeing and returning, chicks falling out of the nest or chicks or eggs being predated as a result of parental abandonment of the nest. Should the Designated Biologist determine project activities are causing or contributing to nest disturbance that might lead to nest failure, the Designated Biologist shall coordinate with the Construction Manager to limit the duration or location of work, and/or set other limits related to use of project vehicles and/or heavy equipment. Nest locations, project activities in the vicinity of nests, and any adjustments to buffer areas shall be described and reported in regular monitoring and compliance reports.

APM BIO-15: Preconstruction surveys for burrows containing suitable bat roosting habitat that could be used as individual bat roosts shall be conducted in all project work areas.

APM BIO-16: The connection from the substation to the transmission line shall be designed to meet the most recent Avian Power Line Interaction Committee guidelines to the extent practicable.

APM BIO-17: Roads, power lines, fences, and other infrastructure associated with the project shall be minimized to reduce habitat loss. Fencing will use wildlife compatible design standards.

APM BIO-18: Collector lines shall be placed underground to reduce avian collisions.

APM BIO-19: Federal and state measures for handling toxic substances shall be followed to minimize danger from spills to water and wildlife resources. Facility operators shall maintain Hazardous Materials Spill Kits on-site. Personnel shall be trained to use the Hazardous Materials Spill Kits.

APM BIO-20: The applicant shall clear vegetation outside of the bird breeding season to the maximum extent practicable. Preconstruction avian clearance surveys shall be conducted by a qualified biologist for vegetation clearing during the bird breeding season (February 1–August 31). If a nest(s) is identified in the preconstruction avian clearance surveys, a qualified monitor shall be on-site during vegetation removal in order to enforce non-disturbance buffers and stop activities as necessary should construction disturb nesting activity.

APM BIO-21: Trash shall be disposed of in covered containers and regularly removed from the site.

APM BIO-22: Surveys for burrowing owl shall be conducted in suitable burrowing owl habitat prior to construction and if construction is suspended for 2 weeks or more. Surveys shall be performed pursuant to the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). If active burrows are found, they shall be avoided using non-disturbance buffer zones. Passive relocation shall be used as described above once the burrow is determined to be inactive.

APM BIO-23: A qualified biologist shall conduct a ground-based golden eagle clearance survey for active golden eagle nests in a 2-mile area surrounding the project, as accessible. Golden eagle clearance surveys shall be conducted annually for each year of construction during the golden eagle nesting season. If active nests are found in the study area, the applicant shall coordinate with CEC, BLM, USFWS, and CDFW to ensure that construction does not result in disturbance of the golden eagles.

APM BIO-24: Project personnel shall remove and dispose of roadkill near the study area to avoid attracting raptors and other scavengers to the site and shall regularly remove vegetation around larger facilities (such as the substation) to reduce raptor foraging.

APM BIO-25: The project shall minimize the use of lighting that could attract migrating birds and bats (that could feed on concentrations of insects at lights). Lighting will be kept to the minimum level necessary for safety and security. High-intensity, steady burning, bright lights such as sodium vapor or spotlights will not be used on project facilities.

APM BIO-26: Project personnel and visitors shall be instructed to drive at low speeds (<15 mph) and be alert for wildlife, especially in low-visibility conditions.

APM BIO-27: Fencing shall be removed at the completion of decommissioning.

APM BIO-28: Desert tortoise exclusion fencing shall be installed at the perimeter of project construction areas (i.e., solar array areas, project buildings, substation/switchyard, earthen berms, and along the edge of access roads and collector line corridors). The fence locations will be determined during final design and will enclose areas of project activity. The fence line and a 30-foot-wide buffer shall be surveyed for desert tortoise before construction of the fence and according to USFWS protocol. Desert tortoise translocation will adhere to guidelines of the desert tortoise translocation plan for the project (see MM BIO-12). Tortoises found in the fence line study area or spotted within 50 m of the fence line study area shall be:

- Assigned a USFWS identification number.
- Given a health assessment.

- Fitted with a transmitter. Tortoises that are too small to accept a transmitter (i.e., no transmitter is available that is 10% or less of the tortoise's body weight) shall be treated as a translocatee and held in situ.
- Moved into habitat adjacent outside the fence line. The tortoise shall be moved into an empty burrow if clearance of the fence area takes place outside the tortoise active season (i.e., November–March and June–August).
- Any of the moved tortoises that return to the project area before completion of fence construction shall be treated as translocatees. Desert tortoises remaining outside the fence line prior to completion of the fence shall be deemed residents. The transmitter shall be removed from the resident tortoise, and no further action shall be taken for the resident tortoises. USFWS procedures shall be followed to clear and handle the desert tortoise.

APM BIO-29: The project area desert tortoise preconstruction clearance survey shall be conducted during the desert tortoise active season (April–May and September–October) unless otherwise agreed to by CEC, USFWS, and CDFW. The survey shall be conducted according to USFWS protocol and preferably during early morning hours to increase the chance juvenile tortoises are found, per the Guidelines. Any tortoise scat shall be collected on each pass of a transect, per the Guidelines. USFWS procedures shall be followed to clear and handle the desert tortoise.

APM BIO-30: The linear facilities desert tortoise preconstruction clearance survey(s) can be conducted at any time throughout the year. Linear facilities for this project include the buried collector lines between arrays and connecting to the substation. Located desert tortoises shall be undisturbed and allowed to clear the site without assistance or interference. Tortoises shall be moved if necessary to reduce the potential for harm from construction activities but shall not be moved more than 500 m in such a scenario. USFWS procedures shall be followed to clear and handle the desert tortoise.

APM BIO-31: Data shall be collected during desert tortoise clearance surveys as described in this section. The same data shall be collected again on tortoises held in the interim in situ on the day that the tortoise is translocated from the study area. The data include:

- Date
- Time
- Temperature (°C)
- Project name
- Site type (project/recipient/control)
- Landowner (BLM)
- Permit/BO #
- Coverage #
- Field crew vendor
- Surveyor (first and last name)
- ID#
- Midline carapace length (MCL) (millimeters)
- Sex

- Universal Transverse Mercator (UTM) (Easting)
- UTM (Northing)
- Location (e.g., burrow)
- Transmitter manufacturer
- Transmitter serial #
- Transmitter frequency
- Transmitter install date
- Battery life (months)
- Status (alive/dead/lost)

APM BIO-32: Following installation of the desert tortoise exclusion fencing, the fencing shall be regularly inspected. Permanent fencing shall be inspected monthly and during and within 24 hours following all major rainfall events. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 72 hours between March 15 and October 31 and within 7 days between November 1 and March 14 of observing damage. Inspections of permanent site fencing shall occur while desert tortoise fencing is in place.

APM BIO-33: No construction, operation, or decommissioning activities shall occur in unfenced areas without a USFWS-approved desert tortoise biologist present. These activities include the construction phase (construction, revegetation), decommissioning phase, and maintenance activities during the operations phase that require new surface disturbance. An adequate number of trained and experienced monitors must be present during all construction and decommissioning activities in unfenced areas, depending on the various construction tasks, locations, and season. A biologist shall be on-site from March 15 through October 31 (active season) during ground-disturbing activities in areas outside the exclusion fencing, and shall be on-call from November 1 through March 14 (inactive season).
The biologist shall check all construction areas immediately before construction activities begin.
The biologist shall inspect construction pipes, culverts, or similar structures 1) with a diameter greater than 3 inches, 2) stored for one or more nights, 3) less than 8 inches aboveground, and 4) within desert tortoise habitat (i.e., outside the permanently fenced area), before the materials are moved, buried, or capped. Alternatively, such materials may be capped before storing outside the fenced area or placing on pipe racks.

APM BIO-34: A Raven Monitoring and Control Plan shall be prepared consistent with the most current USFWS-approved raven management guidelines. The purpose of the plan is to avoid any project-related increases in raven numbers during construction, operation, and decommissioning. The Raven Monitoring and Control Plan shall be submitted to CEC, BLM, CDFW, and USFWS for approval at least 30 days prior to the start of construction.

APM BIO-35: A Burrowing Owl Relocation Plan shall be prepared and submitted to CDFW for approval. Burrowing owls occupying burrows on-site shall be passively relocated outside the nesting season (February 1–August 31) or after a qualified biologist determines that the burrow does not contain eggs or chicks and after consultation with CEC. Prior to construction and passive relocation, artificial burrows shall be installed in areas that would not be disturbed during construction at a ratio of 5:1 for each burrow that will be destroyed by project construction. Passive relocation shall be conducted prior to construction and according to guidelines from the California Burrowing Owl Consortium (1993).

APM BIO-36: Compensatory habitat mitigation shall be provided at a 1:1 ratio for impacts to suitable desert tortoise habitat during construction. A Habitat Compensation Plan shall be prepared to the approval of CEC, CDFW, USFWS, and BLM.

APM BIO-37: No pets or domestic animals shall be allowed on-site prior to or during construction, except kit fox scat detection dogs (with CEC approval) used for preconstruction surveys or postconstruction kit fox mortality monitoring. The project will not authorize the housing or grazing of domestic animals on the project site. Feeding of animals will be prohibited to discourage the spread of non-native birds, to discourage the spread of disease and pathogens, etc.

APM BIO-38: A preconstruction survey will be conducted by a qualified biologist to identify sign of recent mountain lion use of the area (e.g. tracks; scat). The survey will be conducted no more than three days prior to initiation of construction activities. If mountain lion are observed in the study area, the applicant shall coordinate with CEC to ensure that construction does not result in disturbance of mountain lion.

APM BIO-39: A preconstruction survey will be conducted by a qualified biologist to identify sign of recent ringtail use of the area. The survey will be conducted no more than three days prior to initiation of construction activities. If ringtail activity is observed in the study area, the applicant shall coordinate with CEC to ensure that construction activities do not result in disturbance of local ringtail populations.

3.4.5 Mitigation Measures

APMs specific to the proposed project are provided in Section 3.4.4.3. Additional mitigation measures with the potential to decrease the project's impact to biological resources are provided below:

MM BIO-1: Best Management Practices. To reduce indirect impacts to special-status plants and wildlife that may occur in the study area, BMPs shall be implemented prior to and during construction to control dust pollution, prevent discharge of potentially harmful chemicals, and prevent changes in hydrology. BMPs may include the installation of erosion and sedimentation control devices, applying water to control dust, placing drip pans under equipment when not in use, refueling in designated areas, and containing concrete washout properly, among other practices.

MM BIO-2: Worker Environmental Awareness Program. Prior to project initiation, the Designated Biologist shall develop and implement the WEAP (APM BIO-12), which will be available in English and Spanish. Wallet-sized cards summarizing the information shall be provided to all construction and operation and maintenance personnel. The WEAP shall include the following:

- An explanation of the sensitivity of the vegetation communities and special-status plant and wildlife species within and adjacent to work areas, and proper identification of these resources.
- Biology and status of the desert tortoise, golden eagle, burrowing owl, other nesting birds, desert bighorn sheep, kit fox, and American badger and measures to reduce potential effects on these species.
- Actions and reporting procedures to be used if desert tortoise, burrowing owl, other nesting birds, desert bighorn sheep, kit fox, or American badger are encountered.
- An explanation of the function of flagging that designates authorized work areas.
- Driving procedures and techniques to reduce mortality of wildlife on roads.
- Discussion of the federal ESA and CESA, BGEPA, and MBTA and the consequences of non-compliance with these acts.
- The importance of avoiding the introduction of invasive weeds onto the project area and surrounding areas.
- A discussion of general safety protocols such as hazardous substance spill prevention and containment measures and fire prevention and protection measures.
- A review of mitigation requirements that are applicable to their work.

MM BIO-3: Construction Impact Minimization. The project shall implement an advanced technology terrain-following solar tracker system (such as the Nextracker NX Horizon-XTR-0.75 10-inch tracker system, Nevados All Terrain Tracker system, or other system resulting in a similar reduction) that reduces grading under the solar field, consisting of solar power arrays identified as East Array and South Arrays 1, 2 and 3. Quarterly construction monitoring reports shall be provided to the CEC during the

construction period for the project. The quarterly construction monitoring reports shall quantify and document all remaining permanent and temporary grading acreage from project construction with the terrain-following tracker system. All temporary grading impact areas shall be revegetated onsite as described in the project-specific Temporary Disturbance Revegetation Plan (APM BIO-7 and MM-BIO-24). All permanent grading impact areas shall be mitigated at the required compensatory mitigation standards of the resource agencies (APM BIO-36, MM BIO-14, MM BIO-24).

MM BIO-4: Special-Status Plant Species and Cacti Impact Avoidance and Minimization. This measure will provide guidance on how project personnel can avoid unintended impacts to special-status plants on the project area (e.g., Utah vine milkweed) and provide for the salvage of protected cacti prior to construction. This measure includes the following requirements:

- The applicant shall establish Environmentally Sensitive Areas around Utah vine milkweed that have been identified on the project area and/or may be identified in project disturbance areas during site preparation. A minimum 100-foot exclusion area shall be established around the plants, which shall be clearly identified and maintained throughout construction to ensure that avoided plants are not inadvertently harmed. ESAs shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fencing or sediment controls under penalty of work stoppages or compensatory mitigation.
- *Worker Environmental Awareness Program*. The WEAP (APM BIO-12; MM BIO-2) shall include training components specific to protection of special-status plants that occur on the project area.
- *Herbicide and Soil Stabilizer Drift Control Measures*. Special-status plant occurrences within 100 feet of the project disturbance area, including Utah vine milkweed shall be protected from herbicide and soil stabilizer drift. The IWMP includes measures to avoid chemical drift or residual toxicity to special-status plants consistent with guidelines such as those provided by the Nature Conservancy's Global Invasive Species Team, the U.S. Environmental Protection Agency, and the Pesticide Action Network Database.
- *Erosion and Sediment Control Measures*. Erosion and sediment control measures shall not inadvertently impact special-status plants (e.g., by using invasive or non–Mojave Desert native plants in seed mixtures, introducing pest plants through contaminated seed or straw, etc.). These measures shall be incorporated in the Comprehensive Drainage, Stormwater, and Sedimentation Control Plan.
- *Preconstruction Vegetation Salvage*. The applicant shall provide a draft Vegetation Resources Management Plan detailing the methods for the salvage and transplantation of target succulent species covered under the CDNPA. The plan shall be submitted to CDFW for review and approval at least 30 days prior to the start of ground-disturbing activities and shall include, at a minimum, the following elements:
    a. **Soil baseline characterization**. The characterization shall be presented to CDFW prior to ground disturbance and shall include:
        i. Profile description of three representative pedons. (A pedon is the smallest three-dimensional sampling unit displaying the full range of characteristics of a particular soil and typically occupies an area ranging from about 1 to 10 square yards.)
        ii. Characterization of surface application (desert pavement or biological soil crust present). Description of biological soil crust shall include major groups of organisms identified at the site (filamentous cyanobacteria, other cyanobacteria, mosses, lichens, liverworts) and the characteristics by which they were identified (see item b, below).
        iii. Documentation of soil macro-invertebrates (that is, presence of ants, termites, and other

significant macro-invertebrates).

- Bulk density, along with a reference to a generally accepted method for making the determination.
- Fertility (nutrient status, electrical conductivity, sodium adsorption ratio), along with methods by which composite samples were collected and the laboratory methods used to determine these properties. Composite samples will contain equal contributions from at least six randomly located collection points within the soil donor area.
- Organic matter content and total carbon and nitrogen content, along with a reference to generally accepted methods for making the determinations.

a. Soil compaction shall be determined by measurement of bulk density in grams per cubic centimeter (or numerically equivalent units). Bulk density may be determined by any of several standard measurements, but the method used must be referenced to a widely accepted soil methodology publication. In no case shall soil be compacted to a bulk density that exceeds 1.6 grams per cubic centimeter except where no planting is to take place. Penetrometer measurements are not a substitute for bulk density measurements.

   Once characterized, the top 3 inches of topsoil shall be salvaged from the areas where traditional grading will be used per the following protocol, and stored within the project area. The upper 0.25 inch may be collected separately to preserve biological crust organisms. Topsoil may not be distinguishable from subsoils by color or organic content at the time of salvage but is characterized as the layer that contains fine roots during the active growing season. Soil shall be collected, transported, and formed into stockpiles only while the soil is dry. The vegetation in place at or immediately before topsoil collection shall be healthy native vegetation with less than 15% absolute cover of exotic weed growth. Soil occupied by vegetation of high plant diversity shall be given priority over soil occupied by low-diversity native vegetation. Soil may be collected with a front loader, bulldozer, or scraper and transported to storage areas by front loader, dump truck, or scraper. The equipment transporting the soil may not travel across the stockpile more than the minimum number of times required to build the soil to its intended depth. The depth of the stockpiles shall not exceed 4 feet in the case of sandy loam or loamy sand soils. Topsoil stockpiles shall be kept dry and covered if no vegetation is introduced. If native vegetation is grown on the stockpiles to increase seeds and soil organisms, no cover is required. Artificial watering may be provided at the applicant's option.

   Stockpiled topsoil shall be used to grow native plant species for the purpose of producing native seeds and building beneficial microorganisms in the soil volume. All native plant species encountered in the vegetation surveys shall be included in the growing rotation on the stockpiles. Most growing space needs to be dedicated to the species for which the most seeds shall be required. At least half by area of the growing area during each growing cycle shall be dedicated to plant species known to be good mycorrhizal host plants. Members of the families Chenopodiaceae and Amaranthaceae should be limited to less than half the area of the soil stockpiles, with the other half occupied by known mycorrhizal host plant species.

b. **Biological Soil Crust Characterization and Preservation.** Biological soil crust is defined here as a mixture 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. Biological soil crust shall be preserved by collecting the upper 0.25 inch of topsoil from areas to be graded. The applicant and/or its contractor(s) shall collect from specific areas known to contain biological crust organisms or collect upper soil from the entire area to be graded. Collections shall emphasize filamentous cyanobacteria, but other cyanobacteria, mosses, lichens, and liverworts are also considered valuable

contributors to biological soil crust and important in protecting against erosion and reducing weed invasion and shall be collected as a secondary priority. Soil surface crust shall be air dried and stored dry in a shaded location in containers that allow air movement, such as loose-weave fabric bags. In no case may the stored crust be subject to wetting or direct sunlight during storage. All containers shall be clearly labeled with date and location of original collection; name and contact information of persons responsible for identifying suitable material to collect; and the persons who collected, stored, and maintained collections. Biological soil crust shall be re-applied at the time of replanting by crumbling the stored material and broadcasting it on the surface of the soil. Approximately 10% of the stored material shall be broadcast on topsoil storage areas among plants being grown for seed and soil microorganisms. When the growing cycle progresses to new planting, the soil supporting biological crust shall be collected and stored by the same methods prescribed for collections from the original soil, in clearly labeled bags or other suitable containers.

c. **Succulent Transplant**. The majority of the succulent plants located in areas to be dragged, rolled, or spot graded, or above mowing height, shall be salvaged and transplanted into a nursery area. The Succulent Transplant portion of the Vegetation Resources Management Plan shall include, at a minimum:

   i. The location of target plants on the project area;

   ii. Criteria for determining which individual plants are appropriate for salvage;

   iii. The proposed methods for salvage, propagation, transport, and planting;

   iv. Procedures for identifying target species during preconstruction clearance surveys;

   v. Considerations for storing salvaged plants or pre-planting requirements; and

   vi. Suggested transplantation sites.

   Succulents to be transplanted into the nursery area shall be placed in their same compass orientation as they were in their original location. The salvaged plants also shall be kept in long-term soil stockpiles, along with natives grown on the stockpiles, to keep the soil biota fresh.

   Succulent transplants done during preparation of the project area shall be fully documented and serve as trials of methods to be used during plant salvage on the project area. Records shall be maintained for each transplanted specimen including species; height; number of branches or pads as appropriate; donor location by UTM coordinates; methods used to remove, transport, and store the plant; period of temporary storage; location; facility description; planting medium used for storage; and frequency of watering during storage. Records shall be kept at the time of planting at the storage area, and quarterly thereafter during storage until such time as each plant is placed in the field or dies. Transplanted individuals shall be maintained for 3 years, including removal of invasive species and irrigation (if necessary), as well as monitored for 3 years to determine the percentage of surviving plants each year and to adjust maintenance activities using an adaptive management approach.

d. **Seed Collection**. Seed collection shall be carried out within the ROW grant area and within 10 miles of the boundaries of the project area on similar terrain, soil, exposure, slope and elevation to the project area. Seed collection guidelines shall conform to all laws and regulations in effect at the time of collection. Seed collection shall include all plant species known to be removed from the facility. If insufficient seeds are provided by "seed farming" and collection within 10 miles of the site, CEC may approve collection from a greater distance provided other environmental factors at the collection site are good matches to the project area. Collected seed may be used to seed salvaged topsoil piles during the construction phase

and after decommissioning related to restoring the project area.

e. If the palo verde trees on-site meet the CDFW size criterion for replacement (i.e., at least one stem greater than 2 inches in diameter) and cannot be salvaged based on the professional opinion of a qualified biologist/horticulturalist, three replacement plants shall be planted in or near the project area for each affected tree and monitored following the above guidance.

MM BIO-5: Biological Monitoring. Biological Monitor(s) shall be employed to assist the Designated Biologist in conducting preconstruction surveys and monitoring ground disturbance, grading, construction, decommissioning, and restoration activities. Additionally, biological monitoring shall be performed during any ground disturbance or grading activities that occur during operation and maintenance. The Biological Monitor(s) shall have sufficient education and field experience to understand resident wildlife species biology; have experience conducting desert tortoise, burrowing owl, kit fox, and badger field monitoring; and be able to identify these species and their sign (including active burrows). The Designated Biologist shall submit a resume, at least three references, and contact information for each prospective Biological Monitor to CEC, CDFW, and USFWS for approval. To avoid and minimize effects on biological resources, the Biological Monitor(s) shall assist the Designated Biologist with the following:

- Be present during construction activities that take place in suitable habitat for desert tortoise, burrowing owl, kit fox, badger, or other protected species to prevent or minimize harm or injury to these species. This also includes unfenced construction activities for desert bighorn sheep.
- Activities of the Biological Monitor(s) include, but are not limited to, ensuring compliance with all avoidance and minimization measures; monitoring for desert tortoise, burrowing owl, kit fox, badger, and other protected species; halting construction activity in the area if an individual is found; and checking the staking/flagging of all disturbance areas to be sure that they are intact and that all construction activities are being kept within the staked/flagged limits. If a desert tortoise, burrowing owl, desert bighorn sheep, kit fox, badger, or other protected species is found within a work area, the Biological Monitor(s) shall immediately notify the Designated Biologist, who shall determine measures to be taken to ensure that the individual is not harmed.
- Inspect the study area for any special-status wildlife species.
- Ensure that potential habitats within the construction zone are not occupied by special-status species (e.g., potential burrows or nests are inspected).
- In the event of the discovery of a non-listed, special-status ground-dwelling animal, recover and relocate the animal to adjacent suitable habitat at least 200 feet from the limits of construction activities.
- At the end of each work day, inspect all potential wildlife pitfalls (e.g., trenches, bores, other excavations) for wildlife and remove wildlife as necessary. If the potential pitfalls will not be immediately backfilled following inspection, the Biological Monitor(s) will ensure that the construction crew slopes the ends of the excavation (3:1 slope), provides wildlife escape ramps, or completely and securely covers the excavation to prevent wildlife entry.
- Inspect the site to ensure trash and food-related waste is placed in closed-lid containers and that workers do not feed wildlife. Also inspect the work area each day to ensure that no microtrash (e.g., bolts, screws, etc.) is left behind.

MM BIO-6: Crotch's Bumble Bee Impact Avoidance and Minimization. The below mitigation measures shall only be required if Crotch's bumble bee remains as a candidate state endangered species or is listed as a state endangered species at the time of project construction, operations and maintenance, or

decommissioning. These avoidance measures will be implemented to avoid take of the species if vegetation clearance and ground disturbance activities are proposed to occur during the following periods:

- Queen Flight Season (February through March), when queens emerge in the spring searching for nest sites.
- Colony Active Period (April through August), the most active flight period and highest detection probability for the species.
- Gyne Flight Season (September through October), the fall flight period when gynes mate and search for overwintering habitat.

If it is determined that "take" or adverse impacts to Crotch's bumble bee cannot be avoided during project activities, the applicant must consult the CEC to determine if a CESA incidental take permit is required.

1. ***Pre-construction Surveys.*** Pre-construction surveys for the Crotch's bumble bee shall be conducted by a qualified biologist prior to vegetation clearance and ground disturbance activities that are proposed to occur during the following periods:

    a. *Nesting Season.* Prior to vegetation removal and ground disturbing activities occurring during the Queen Flight Season and Colony Active Period (February 1 through August 31), a qualified biologist shall perform two (2) visual surveys consisting of meandering transects no more than 10 days prior to the commencement of vegetation removal and ground disturbance in that area. A qualified biologist shall conduct surveys at least four (4) days apart, with the second survey occurring within two (2) days prior to the onset of vegetation removal and ground disturbance in that area. The biologist shall focus attention on areas with blooming native and non-native nectar and pollen resources. The survey duration shall be appropriate to the size of the area planned for vegetation removal and ground disturbance plus 50 feet, based on the metric of a minimum of one (1) person-hour of searching per three (3) acres of suitable habitat as outlined within CDFW's Survey Considerations for CESA Candidate Bumble Bee Species (CDFW 2023). To the maximum extent possible, surveys shall be conducted between 8:00 AM and 4:00 PM on sunny days between 55- and 90-degrees Fahrenheit, with sustained wind speeds measuring less than 10 miles per hour.

    If Crotch's bumble bee is detected or suspected during pre-construction surveys, the biologist shall flag the area where the observation was made and closely monitor the flagged areas during vegetation removal and ground disturbing activities. Additionally, if Crotch's bumble bee is suspected or confirmed within the project area, a qualified biologist shall make every effort to locate active nests. The biologist shall observe any burrow entrances for signs of Crotch's bumble bee. To confirm a suspected nest, a qualified biologist may block/cover any burrow entrance with a jar of appropriate size for no more than 30 minutes or until a bumble bee is detected. If a Crotch's bumble bee nest is detected or suspected, the applicant shall immediately halt all project activities within 50 feet of the nest. A qualified biologist shall delineate the 50-foot buffer and notify all workers not to enter the environmentally sensitive area. The applicant shall contact the CEC within 24 hours for further consultation. The biologist shall record the nest location with a GPS unit (including datum and horizontal accuracy in feet) and include photographs and a map of the nest location as part of notification to the CEC. The no disturbance buffer shall be maintained until the nest(s) senesce. Starting in July, nest activity shall be observed for a minimum of 1 hour per day for 3 consecutive days to determine if activity has

ceased and if the nest has senesced. The applicant shall increase the size and/or modify the nest buffer dependent upon notice from CEC.

b. *Overwintering Season.* If vegetation removal and ground disturbing activities occur during the overwintering season (November 1 through January 31), a qualified biologist shall walk ahead of grading and vegetation removal equipment and look for potential hibernacula such as leaf litter, logs, and rodent burrows. If any overwintering Crotch's bumble bees are found, the applicant shall immediately stop and prohibit all project activities within 50 feet of the overwintering queen and hibernaculum. A qualified biologist shall delineate a 50-foot buffer and notify all workers not to enter the environmentally sensitive area. If an overwintering queen is exposed, a qualified biologist shall cover and protect the queen using the substrate it was found within/under and return any removed materials (e.g., grass, vegetation, bark, and debris) to re-create pre-disturbed conditions. The applicant shall contact the CEC within 24 hours for further consultation. The biologist shall record the queen's location with a GPS unit (including datum and horizontal accuracy in feet) and include photographs and a map of the queen's location as part of notification to the CEC. The applicant shall increase the size and/or modify the nest buffer dependent upon notice from CDFW. Overwintering buffers shall be maintained until further instructions are received from the CEC.

If Crotch's bumble bee individuals are identified during pre-construction surveys, then the following additional avoidance measures should be implemented:

1. ***Initiate Consultation with the CEC.*** The applicant will consult with the CEC to determine if incidental take at the project will be likely, and if an incidental take permit is required.
2. ***Biological Monitoring During Construction.*** A qualified biologist(s) will be present each day during initial ground disturbance activities if Crotch's bumble bees are identified during pre-construction surveys.
3. ***Seasonal Restrictions and Vegetation Management.*** Vegetation and ground disturbance within suitable Crotch's bumble bee habitat shall be avoided during the Queen Flight Season (February through March) and the Gyne Flight Season (September through October), to the greatest extent feasible. If feasible, native and non-native flowering vegetation removal shall occur prior to the blooming period of potential floral resources and before the Queen/Gyne Flight Seasons and Colony Active Period (February through October). If vegetation removal cannot be avoided during this period, or if vegetation needs to be removed during the bloom period for potential floral resources: flowering vegetation should be removed in a patched manner so as to leave areas of floral resources as refugia for foragers or wait until bloom has ceased. Additionally, removal of non-native plants should be prioritized over native plants. If mowing activities are to occur, vegetation shall be mowed to a height no lower than 4 inches to prevent disturbance of established nests or overwintering queen hibernacula.
4. ***Provide Compensatory Mitigation for Impacts on Crotch's Bumble Bee.*** Direct impacts to suitable Crotch's bumble bee habitat shall be offset through compensatory mitigation, which may include, but is not necessarily limited to, on-site or off-site habitat preservation, enhancement, restoration, and/or creation at a ratio of no less than 1:1.

MM BIO-7: Designated Biologist. The applicant shall assign at least one Designated Biologist to the project. The applicant shall submit the resume of the proposed Designated Biologist(s), with at least three

references and contact information, to the BLM Authorized Officer for approval in consultation with the CEC, CDFW, and USFWS.

The Designated Biologist must meet the following minimum qualifications:

- Have a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;
- Have 3 years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;
- Have at least 1 year of field experience with biological resources found in or near the study area;
- Meet the current USFWS Authorized Biologist qualifications criteria, demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS;
- Possess a CESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the BLM Authorized Officer, in consultation with the CEC, CDFW and USFWS, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the MMs.

MM BIO-8: Fence Design and Site Permeability. Permanent site fencing installed around the project—including perimeter security fencing desert tortoise exclusionary fencing—should be designed to direct wildlife toward the wildlife undercrossing to provide safe passage under the freeway and shall be regularly inspected and maintained for the life of the project. Alternate designs may also be constructed with prior written approval from the CEC, CDFW, and USFWS. Regardless, the project shall ensure that any such fence meets existing specifications that have been developed to preclude accidental entanglement of desert bighorn sheep, deer, and other animals.

Fencing should be sufficient to prevent desert bighorn sheep passage (e.g., 2m-2.5m tall chain-link) – should be installed at the corridor entrances between (a) the East Array and South Array 1, (b) South Array 1 and South Array 2, and (c) South Array 2 and South Array 3 on the east side (Figure 2, Project Design). Additionally, the project shall extend a line of project fencing to the north to connect with the wildlife exclusion fencing associated with the I-15 overcrossing structure (Figure 13; Dudek 2024). Approximately 1,640 linear feet of this can be accomplished within the existing project boundary, but the additional approximately 300 linear feet will need to be coordinated with BLM and possibly Caltrans. The project will secure the necessary encroachment permits or other mechanism to continue fencing between the project boundary and the wildlife exclusion fencing associated with the I-15 overcrossing structure. Care should be taken when connecting the fences to make sure that they are physically connected or directly abut one another such that wildlife can't pass through or get stuck between them. The ultimate fencing plans should be reviewed by the CEC for final approval prior to site disturbance activities.

MM BIO-9: Compliance Monitoring by the Designated Biologist. Prior to ground-disturbing activities, an individual shall be designated and approved by the CEC and CDFW as a Designated Biologist (i.e., field contact representative). Designated Biologist qualifications are presented below.

The Designated Biologist shall be employed for the period during which ongoing construction and postconstruction monitoring and reporting by an approved biologist is required. Each successive Designated Biologist shall be approved by the CEC. The Designated Biologist shall have the authority to ensure compliance with all measures set forth in the BO and CESA Section 2081 take authorization and with all MMs included herein, and shall be the primary agency contact for the implementation of these measures. The Designated Biologist shall have the authority and responsibility to halt any project

activities that are in violation of the terms of the BO, Section 2081 take authorization, or project MMs. A list of responsibilities of the Designated Biologist is summarized below.

To avoid and minimize effects to biological resources, the Designated Biologist shall:

- Notify the CEC, CDFW, and USFWS at least 14 calendar days before initiation of ground-disturbing activities.
- Immediately notify the CEC in writing if the applicant/owner does not comply with any of the MMs or terms of the BO and/or the Section 2081 take authorization including, but not limited to, any actual or anticipated failure to implement such measures within the periods specified.
- Ensure performance of daily compliance inspections during ongoing construction as clearing, grubbing, and grading are completed, and submit a monthly compliance report to the CEC until construction is complete.

MM BIO-10: Speed Limits. Speed limits along all access roads outside of permanent desert tortoise fencing shall not exceed 15 mph to minimize dust during construction activities. Speed limits within permanent desert tortoise fencing shall not exceed 25 mph to minimize impacts during operation and maintenance. Nighttime vehicle traffic associated with project activities shall be kept to a minimum volume and speed (maximum of 15 mph) to prevent mortality of nocturnal wildlife species.

MM BIO-11: Desert Tortoise Protection. The applicant/owner shall undertake appropriate measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to desert tortoise. Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling, and other procedures shall be consistent with those described in the USFWS's *Desert Tortoise (Mojave Population) Field Manual* (USFWS 2009) or more current guidance provided by CDFW and USFWS. The applicant/owner shall also implement all terms and conditions described in the BO to be prepared by USFWS and CESA ITP. These measures include, but are not limited to, the following, subject to modification by the terms of incidental take authorizations issued by the USFWS and CEC:

- ***Desert Tortoise Fencing along I-15.*** If required by the CEC, to avoid increases in vehicle-related mortality from disruption of local movement patterns along the existing ephemeral wash systems, desert tortoise-proof fencing shall be installed along the existing freeway ROW fencing on both sides of I-15 for the entire east-west dimension of the project area. The tortoise fencing shall be designed to direct tortoises to existing undercrossing to provide safe passage under the freeway and shall be regularly inspected and maintained for the life of the project.
- ***Desert Tortoise Exclusion Fence Installation.*** To avoid impacts to desert tortoise, permanent desert tortoise exclusion fencing shall be installed along the permanent perimeter security fence and temporarily installed along road corridors during construction. The proposed alignments for the permanent perimeter fence and temporary fencing shall be flagged and surveyed within 24 hours prior to the initiation of fence construction. Clearance surveys of the perimeter fence and temporary fencing areas shall be conducted by the Designated Biologist(s) using techniques outlined in the USFWS's *Desert Tortoise (Mojave Population) Field Manual* and may be conducted in any season with the CEC, USFWS, and CDFW approval. Biological Monitors may assist the Designated Biologist under his or her supervision. These fence clearance surveys shall provide 100% coverage of all areas to be disturbed and an additional transect along both sides of the fence line covering an area approximately 90 feet wide centered on the fence alignment. Transects shall be no greater than 15 feet apart. All desert tortoise burrows and burrows constructed by other species that might be used by desert tortoise shall be examined to assess occupancy of each burrow by desert tortoise and handled in accordance with the USFWS's

Desert Tortoise Field Manual. Any desert tortoise located during fence clearance surveys shall be handled by the Designated Biologist in accordance with the USFWS's 2009 *Desert Tortoise (Mojave Population) Field Manual* (USFWS 2009).

a. *Timing, Supervision of Fence Installation*. The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present.

b. *Fence Material and Installation*. The permanent tortoise exclusionary fencing shall be constructed in accordance with the USFWS's *Desert Tortoise (Mojave Population) Field Manual* (Chapter 8 – Desert Tortoise Exclusion Fence) (USFWS 2009).

c. *Security Gates*. Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. The gates may be electronically activated to open and close immediately after the vehicle(s) have entered or exited to prevent the gates from being kept open for long periods of time. Cattle grating designed to safely exclude desert tortoise shall be installed at the gated entries to discourage tortoises from gaining entry.

d. *Fence Inspections*. Following installation of the desert tortoise exclusion fencing for both the permanent site fencing and temporary fencing, the fencing shall be regularly inspected. If tortoises were moved out of harm's way during fence construction, permanent and temporary fencing shall be inspected at least two times per day for the first 7 days to ensure a recently moved tortoise has not been trapped within the fence. Thereafter, permanent fencing shall be inspected monthly and during or within 24 hours following all major rainfall events. Exceptions to inspections during major rainfall events may be made as needed to maintain crew safety. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of permanent site fencing shall occur for the life of the project. Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All damaged temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the area for tortoise.

- ***Desert Tortoise Clearance Surveys within Solar Arrays and Gen-tie.*** Clearance surveys shall be conducted in accordance with the USFWS *Desert Tortoise (Mojave Population) Field Manual* (USFWS 2009) (Chapter 6 – Clearance Survey Protocol for the Desert Tortoise – Mojave Population) and shall consist of two surveys covering 100% of the study area by walking transects no more than 15 feet apart. If a desert tortoise is located during the second survey, a third survey shall be conducted. Each separate survey shall be walked in a different direction to allow opposing angles of observation. Clearance surveys of the project area may only be conducted when tortoises are most active (April–May or September–October) unless the project receives approval from the CEC, CDFW, and USFWS. Clearance surveys of linear features may be conducted during any time of the year. Any tortoise located during clearance surveys of solar arrays shall be translocated or relocated and monitored in accordance with the DTTP (MM 3.4-2b). The Designated Biologist, who may be assisted by the Biological Monitors, shall assess occupancy of each burrow by desert tortoise in accordance with the USFWS *Desert Tortoise (Mojave Population) Field Manual* (USFWS 2009). All potential desert tortoise burrows located during clearance surveys shall be excavated by hand, tortoises removed, and burrows collapsed or blocked to prevent occupation by desert tortoise in accordance with the DTTP.

- ***Monitoring Following Clearing.*** Following the desert tortoise clearance and removal from the project area, workers and heavy equipment shall be allowed to enter the project area to perform

clearing, grubbing, leveling, and trenching activities. A Designated Biologist or Biological Monitor shall be on-site for clearing and grading activities to move tortoises missed during the initial tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the DTTP.

- ***Reporting*.** The Designated Biologist shall record the following information for any desert tortoise handled: a) the locations (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing and whether desert tortoise voided their bladders; c) location moved from and location moved to (using GPS); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled tortoise. Desert tortoise moved from within the project area shall be marked and monitored in accordance with the DTTP. All collected data related to tortoise relocation shall be provided to the CEC, CDFW, and USFWS.

MM BIO-12: Desert Tortoise Translocation Plan. The applicant/owner shall develop and implement a USFWS- and CEC-approved DTTP. The DTTP, which shall be approved prior to any ground disturbance or tortoise relocation, shall include measures to minimize the potential for repeated translocations of individual desert tortoise. The goals of the DTTP shall be to relocate all desert tortoise from the project area to nearby suitable habitat; minimize impacts on resident desert tortoise outside the project area; minimize stress, disturbance, and injuries to relocated/translocated tortoises; and assess the success of the translocation effort through monitoring. The DTTP shall follow the *Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance* (USFWS 2020) and shall clearly define how it addresses the 11 steps outlined in the guidance. The final DTTP shall be based on the draft DTTP prepared by the applicant/owner and shall include all revisions deemed necessary by CEC, CDFW, and USFWS. The final plan will be subject to modification for consistency with the CESA ITP, USFWS take authorization and/or BO conservation requirements.

MM BIO-13: Desert Tortoise Compliance Verification. The applicant/owner shall provide CDFW and USFWS staff with unfettered access to the project area and compensation lands under the control of the project owner and shall otherwise fully cooperate with the CEC's efforts to verify the project owner's compliance with, or the effectiveness of, adopted MMs. The Designated Biologist shall do all of the following:

- ***Notification*.** Notify the CEC at least 14 calendar days before initiating construction-related ground disturbance activities; immediately notify the CEC in writing if the project owner is not in compliance with any conditions of certification, including but not limited to any actual or anticipated failure to implement MMs within the time periods specified in the conditions of certification;
- ***Monitoring During Grubbing and Grading*.** Remain on-site daily while vegetation salvage, grubbing, grading, and other ground-disturbing construction activities are taking place to avoid or minimize take of listed species, and verify personally or have Biological Monitor(s) verify compliance with all impact avoidance and minimization measures, including checking all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protective zones.
- ***Monthly Compliance Inspections*.** Conduct compliance inspections at a minimum of once per month after clearing, grubbing, and grading are completed and submit a monthly compliance report to the CEC, CDFW, and USFWS during construction.
- ***Notification of Injured or Dead Listed Species*.** If an injured or dead federally or state-listed species is detected on or near the project area the CEC, CDFW, and USFWS shall be notified

immediately by phone. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine whether further actions are required to protect listed species. Written follow-up notification via facsimile or electronic communication shall be submitted to these agencies within 2 calendar days of the incident and include the following information as relevant:

a. *Injured Desert Tortoise*. If a desert tortoise is injured as a result of project-related activities during construction, the Designated Biologist or Biological Monitor(s) shall immediately take it to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the applicant/owner. Following phone notification as required above, CDFW and USFWS shall determine the final disposition of the injured animal, if it recovers. Written notification shall include, at a minimum, the date, time, location, and circumstances of the incident and the name of the facility where the animal was taken.

b. *Desert Tortoise Fatality*. If a desert tortoise is killed by project-related activities during construction, operation and maintenance, or decommissioning, a written report with the same information as an injury report shall be submitted the CEC, CDFW, and USFWS. These desert tortoises shall be salvaged according to federally established guidelines. The applicant/owner shall pay to have the desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident.

    1. ***Final Listed Species Mitigation Report.*** The Designated Biologist shall provide the CEC and CDFW a Final Listed Species Mitigation Report that includes, at a minimum, 1) all available information about project-related incidental take of listed species; 2) information about other project impacts to the listed species; 3) construction dates; 4) an assessment of the effectiveness of conditions of certification in minimizing and compensating for project impacts; 5) recommendations on how MMs might be changed to more effectively minimize and mitigate the impacts of future projects on the listed species; and 6) any other pertinent information, including the level of take of the listed species associated with the project.

    2. ***Stop Work Order.*** CEC may issue the project owner a written stop work order to suspend any activity related to the construction or operation of the project to prevent or remedy a violation of one or more conditions of certification (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or protected species. The project owner shall comply with the stop work order immediately upon receipt thereof.

MM BIO-14: Desert Tortoise Compensatory Mitigation: To fully mitigate for habitat loss and potential take of desert tortoise, the project owner shall provide compensatory mitigation consistent with federal requirements, adjusted to reflect the final project footprint. The acreage for mitigation of desert tortoise habitat will be at a 1:1 ratio. For the purposes of this condition, the project footprint means all lands disturbed in the construction and operation of the project, including all project linears, as well as undeveloped areas inside the project's boundaries that will no longer provide viable long-term habitat for the desert tortoise. To satisfy this condition, the project owner shall acquire, protect, and transfer 1 acre of desert tortoise habitat for every acre of habitat within the final project footprint, and provide associated funding for the acquired lands, as specified below. In lieu of acquiring land itself, the project owner may satisfy the requirements of this condition by depositing funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as provided below in Section 3.i. of this measure.

If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement, and long-term management of compensation lands include all of the following, subject to modification by the terms of incidental take authorizations issued by USFWS and CEC:

- ***Selection Criteria for Compensation Lands*.** The compensation lands selected for acquisition in fee title or in easement shall:
    a. be within the Western Mojave Recovery Unit, or, with prior CEC, USFWS, and CDFW approval, within the Eastern Mojave Recovery Unit as defined in the 2011 Revised Recovery Plan (USFWS 2011b), with potential to contribute to desert tortoise habitat connectivity and build linkages between desert tortoise designated critical habitat, known populations of desert tortoise, and/or other preserve lands;
    b. provide habitat for desert tortoise with capacity to regenerate naturally when disturbances are removed;
    c. be prioritized near larger blocks of land that are either already protected or planned for protection, such as Desert Wildlife Management Areas within the Western Mojave Recovery Unit (or nearby portions of the Eastern Mojave Recovery Unit with prior USFWS and CDFW approval) or which could feasibly be protected long term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
    d. be connected to lands with desert tortoise habitat equal to or better quality than the project area, ideally with populations that are stable, recovering, or likely to recover;
    e. not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;
    f. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
    g. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and
    h. have water and mineral rights included as part of the acquisition, unless BLM and CEC, in consultation with CDFW and USFWS, agree in writing to the acceptability of the land.
- ***Review and Approval of Compensation Lands Prior to Acquisition*.** The project owner shall submit a formal acquisition proposal to the CEC, BLM, CDFW, and USFWS describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for desert tortoise in relation to the criteria listed above. Approval from the CEC and BLM, in consultation with CDFW and USFWS shall be required for acquisition of all compensatory mitigation parcels.
- ***Compensation Lands Acquisition Requirements*.** The project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CEC and BLM, in consultation with CDFW and USFWS, have approved the proposed compensation lands:
    a. *Preliminary Report*. The project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the BLM. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CEC and BLM, in consultation with CDFW and USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission, and the Wildlife Conservation Board.

b. *Title/Conveyance*. The project owner shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement as required by the BLM and CEC. Transfer of either fee title or an approved conservation easement will usually be sufficient, but some situations, e.g., the donation of lands burdened by a conservation easement to BLM, will require that both types of transfers be completed. Any transfer of a conservation easement or fee title must be to CEC, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or BLM under terms approved by the BLM. If an approved non-profit organization holds title to the compensation lands, a conservation easement shall be recorded in favor of the CEC in a form approved by the CEC. If an approved non-profit holds a conservation easement, the CEC shall be named a third-party beneficiary.

c. *Initial Habitat Improvement Fund*. The project owner shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code Section 65965) and if it meets the approval of CEC and BLM. If CEC takes fee title to the compensation lands, the habitat improvement fund must be paid to CEC or its designee.

d. *Property Analysis Record*. Upon identification of the compensation lands, the project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate long-term maintenance and management fee to fund the in-perpetuity management of the acquired mitigation lands.

e. *Long-term Maintenance and Management Fund*. The project owner shall deposit in NFWF's REAT Account a capital long-term maintenance and management fee in the amount determined through the PAR or PAR-like analysis conducted for the compensation lands. BLM, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If the CEC takes fee title to the compensation lands, the CEC shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for the CEC and with CEC supervision.

f. *Interest, Principal, and Pooling of Funds.* The project owner, BLM, and the CEC shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:

    i. Interest. Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by the CEC designed to protect or improve the habitat values of the compensation lands.

    ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CEC or the approved third-party long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If the CEC takes fee title to the compensation lands, monies received by the CEC pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless the CEC designates NFWF or another entity to manage the long-term maintenance and management fee for the CEC.

iii. Pooling Long-Term Maintenance and Management Fee Funds. The CEC, or a BLM- and CDFW-approved non-profit organization qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the endowment with other endowments for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CEC.

g. *Other expenses*. In addition to the costs listed above, the project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to title and document review costs; expenses incurred from other state agency reviews; overhead related to providing compensation lands to the CEC or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.

h. *Mitigation Securit*y. The project owner shall provide financial assurances to the BLM and the CEC with copies of the document(s) to the CDFW and USFWS, to guarantee that an adequate level of funding is available to implement the MMs described in this condition. These funds shall be used solely for implementation of the measures associated with the project in the event the project owner fails to comply with the requirements specified in this condition, or shall be returned to the project owner upon successful compliance with the requirements in this condition. The BLM's or CEC's use of the security to implement measures in this condition may not fully satisfy the project owner's obligations under this condition. Financial assurance can be provided to the BLM and CEC in the form of an irrevocable letter of credit, a pledged savings account, or another form of security ("Security"). Prior to submitting the Security to the BLM and CEC, the project owner shall obtain the BLM's approval in consultation with CDFW and the USFWS of the form of the Security. The actual costs to comply with this condition will vary depending on the final footprint of the project and the actual costs of acquiring, improving, and managing the compensation lands.

i. *NFWF REAT Account*. The project owner may elect to fund the acquisition and initial improvement of compensation lands through NFWF by depositing funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose must be made in the same amounts as the security required above and may be provided in lieu of security. If this option is used for the acquisition and initial improvement, the project owner shall make an additional deposit into the REAT Account if necessary to cover the actual acquisition costs and administrative costs and fees of the compensation land purchase once land is identified and the actual costs are known. If the actual costs for acquisition and administrative costs and fees are less than anticipated in the PAR analysis, the excess money deposited in the REAT Account shall be returned to the project owner. Money deposited for the initial protection and improvement of the compensation lands shall not be returned to the project owner.

The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the BLM and CDFW. Such delegation shall be subject to approval by the BLM and the CEC, in consultation with CDFW and USFWS, prior to land acquisition, initial protection, or maintenance and management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be implemented with 18 months of BLM's approval.

MM BIO-15: Minimize Vehicle and Equipment Impacts during Operation and Maintenance.
The applicant/owner shall implement measures to minimize the potential for desert tortoise and other wildlife species mortality along access and maintenance roads. These measures shall include:

- Speed limits identified in MM BIO-10 shall continue to be applied during operation and maintenance.
- Pedestrian access outside the limits of the designated access/maintenance roads is permitted year-round as long as no ground-disturbing activities take place.
- Vehicle traffic and parking shall be confined to designated access roads, and equipment and materials staging areas shall be clearly defined to avoid impacting habitat during the operation phase.

MM BIO-16: Mojave Fringe-toed Lizard Protection Measures. A qualified biologist will conduct a focused survey for Mojave fringe-toed lizard prior to ground disturbance in suitable habitat (aeolian sand deposits) within all active work areas. Two survey replicates will be performed during the Mojave fringe-toed lizard active season (March–October) during appropriate weather conditions. Qualified biologists will walk transects spaced 10m apart throughout areas with suitable habitat within the study area. Detections of Mojave fringe-toed lizard will be recorded using a GPS unit. If Mojave fringe-toed lizards are not detected, then no further action is needed. If Mojave fringe-toed lizards are found, then a pre-construction survey should be conducted no more than one week before ground disturbance begins, and any Mojave fringe-toed lizards should be moved to suitable habitat south of the Project area where the species was confirmed to be present.

MM BIO-17: Avian Monitoring and Mitigation Program. An Avian Monitoring and Mitigation Program (AMMP) shall be initiated and approved by the CEC and BLM in consultation with CDFW and USFWS prior to construction and continue for at least 5 years following commercial operation (and longer if determined necessary and appropriate by the Designated Biologist). The AMMP shall prevent substantial adverse effects to special-status species through implementation of the approach outlined in the postconstruction monitoring and adaptive management provisions of Region 8 Interim Guidelines for the Development of a Project-specific Avian and Bat Protection Plan for Solar Energy Plants and Related Transmission Facilities (USFWS 2010), in conjunction with any measures required after consultation with USFWS and/or CDFW under the ESA, CESA, or BGEPA, if applicable. The Program shall use surveys and monitoring of on-site avian and bat use and behavior to document species composition and changes in avian and bat use over time. The purpose of the AMMP is to provide an adaptive management and decision-making framework for reviewing, characterizing, and responding to avian and bat monitoring results, and reducing long-term impacts on these taxa. The AMMP shall include the following components:

- A description of the baseline and ongoing avian and bat survey methods, including identification of onsite survey locations and seasonal survey considerations, and a description of acoustic bat monitoring methods.
- Avian and bat mortality and injury monitoring that includes:
    a. Onsite monitoring of representative locations in the facility, at a level of effort that accounts for potential spatial bias and allows for the extrapolation of survey results to non-surveyed areas. The AMMP will provide a rationale justifying the proposed schedule of carcass searches.
    b. Low-visibility and high-wind weather event monitoring to document potential weather-related collision risks that may be associated increased risk of avian or bat collisions with project features, including foggy, highly overcast, or rainy night-time weather typically associated with an advancing frontal system, and high wind events (40-mph winds) are sustained for period of greater than 4 hours. The monitoring report shall include survey frequency, locations, and methods.

c. Scavenger and searcher efficiency trials to document the extent to which avian or bat fatalities remain visible over time and can be detected, and to adjust the survey timing and survey results to reflect scavenger and searcher efficiency rates.

d. A description of statistical methods used to generate facility estimates of potential avian and bat impacts based on the number of detections during standardized searches during the monitoring season for which the cause of death can be determined.

e. Field detection and mortality or injury identification, cause attribution, handling and reporting requirements. The AMMP shall include detailed specifications on data collection and provide a carcass collection protocol.

- All postconstruction mortality monitoring studies included in the AMMP shall be performed by a -third party contractor for 5 years following commercial operation and approval of the AMMP by the BLM. At the end of the 5-year period, the BLM shall determine whether the survey program shall be continued.
- An adaptive management program shall be developed to identify and implement reasonable and feasible measures that would reduce levels of avian or bat mortality or injury attributable to project operations and facilities. Such measures could potentially include efforts to make panels more visible to birds (e.g., white borders around panel edges or the use of noise deterrents).

The adaptive management program shall include (i) reasonable measures for characterizing the extent and importance of detected mortality and injuries clearly attributable to the project; (ii) potential measures that the project owner could implement to adaptively respond to detected mortality and injuries attributable to the project. Adaptive actions undertaken will be discussed and evaluated in survey reports. Any impact reduction measures must be commensurate (in terms of factors that include geographic scope, costs, and scale of effort) with the level of avian or bat mortality or injury that is specifically and clearly attributable to the project facilities; and (iii) Appropriate performance standards for mitigation of impacts to any species regulated by BGEPA, ESA, and CESA as well as MMs that reduce or offset mortalities caused by the project to a level that avoids a substantial, long-term reduction in the demographic viability of the local population of the species in question.

MM BIO-18. Avoid Disturbance to Nesting Birds. Vegetation clearing shall take place outside of the general avian breeding season (February 15–September 1), when feasible. If vegetation clearing cannot occur outside the avian breeding season, the Designated Biologist/Biological Monitor(s) shall conduct a preconstruction survey for nesting birds no more than 3 days prior to vegetation clearing. If no active nests are found, clearing can proceed. If active nests are found, no clearing shall be allowed within 150 feet (for passerines) to 250 feet (for raptors) of the active nests until the Designated Biologist/Biological Monitor(s) determines the nest is no longer active or the nest fails. Based on observation of the individual birds' tolerance to human activity, this buffer may be reduced by a qualified biologist. Encroachment into the buffer may occur at the discretion of a qualified biologist.

The Designated Biologist/Biological Monitor(s) shall submit the results of the preconstruction nesting bird surveys to the CEC, BLM, USFWS, and CDFW. Following agency coordination, the size of the next buffer may be adjusted based upon the magnitude of proposed activities and observed sensitivity of the bird to disturbance.

MM BIO-19: Lighting Specifications to Minimize Bird and Bat Impacts. The applicant/owner shall minimize night lighting during construction by using shielded directional lighting that is pointed downward, thereby avoiding illumination to adjacent natural areas and the night sky.

MM BIO-20: Bird and Bat Conservation Strategy (BBCS). The applicant/owner shall develop a BBCS to address project impacts to special-status avian and bat species that shall be consistent with the Region 8 *Interim Guidelines for the Development of a Project-specific Avian and Bat Protection Plan for Solar Energy Plants and Related Transmission Facilities* (USFWS 2010). The applicant/owner shall submit the BBCS to the CEC, CDFW, and USFWS for review and approval prior to initiation of project construction. The BBCS shall include an assessment of potential avian and bat impacts from lighting, noise, collision, electrocution, and attraction of ravens, as applicable; measures to mitigate for the effects to birds; a description of general avoidance and minimization measures applicable during construction, operation and maintenance, and postconstruction to include nest management and postconstruction monitoring; a description of the reporting requirements and reporting schedule and duration; and the adaptive management strategy. A raven management element shall be included in the BBCS or provided separately that includes measures such as storage of garbage in raven-proof containers and installation of anti-nesting devices on structures where raven nests could be built.

MM BIO-21: Burrowing Owl Protection Measures. To fully mitigate for habitat loss and potential take of burrowing owl, the project owner shall provide compensatory mitigation consistent with CDFW requirements, adjusted to reflect the final project footprint. The acreage for mitigation of burrowing owl habitat will be at a 1:1 ratio. For the purposes of this condition, the project footprint means all lands disturbed in the construction and operation of the project, including all project linears, as well as undeveloped areas inside the project's boundaries that will no longer provide viable long-term habitat for burrowing owl.

If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement, and long-term management of compensation lands must comply with the terms of incidental take authorizations issued by the CEC. The compensation lands selected for acquisition in fee title or in easement shall comply with the terms of incidental take authorizations issued by the CEC.

No more than 14 days prior to the start of ground disturbance, a preconstruction survey for burrowing owls in conformance with the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) shall be completed within suitable habitat at every work area and within a 150-m buffer zone of each work area. Work areas will be resurveyed following periods of inactivity of 2 weeks or more. The applicant/owner shall submit the results of the preconstruction survey to BLM's Authorized Officer and the CEC. The applicant/owner shall also submit evidence of conformance with federal and state regulations regarding the protection of the burrowing owl by demonstrating compliance with the following:

- Impacts to active burrowing owl territories shall be mitigated at a minimum of a 1:1 ratio through a combination of off-site habitat compensation and/or off-site restoration of disturbed habitat capable of supporting this species. The acquisition of occupied habitat off-site shall be in an area where energy facilities would not pose a mortality risk. Acquisition of habitat shall be consistent with the CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). The preserved habitat shall be occupied by burrowing owl and shall be of superior or similar habitat quality to the impacted areas in terms of soil features, extent of disturbance, habitat structure, and dominant species composition, as determined by a qualified ornithologist. The site shall be approved by the BLM and CEC. Land shall be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. The off-site area to be preserved can coincide with other off-site mitigation lands, with the approval of the CEC.
- The approved biologist shall remain on-site until all vegetation is cleared and, at a minimum, conduct site and fence inspections on a regular (monthly) schedule throughout construction to ensure that the project is in compliance with the MMs.
- Employees and contractors shall look under vehicles and equipment for the presence of wildlife prior to moving vehicles and equipment. If present, the animal shall be left to move on its own.

No listed species shall be handled without concurrence from USFWS and/or CDFW, as applicable.

MM BIO-22: American Badger and Desert Kit Fox Protection. To avoid direct impacts to American badger and desert kit fox, preconstruction surveys shall be conducted for these species concurrently with the desert tortoise surveys. Surveys shall be conducted as described below:

- Biological Monitors shall perform preconstruction surveys for badger and kit fox dens in the project disturbance area, including a 20-foot swath beyond the disturbed area, utility corridors, and access roads. If dens are detected, each den shall be classified as inactive, potentially active, or definitely active.
- Inactive dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers or kit fox.
- Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for 3 consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance.
- If no tracks are observed in the tracking medium or no photos of the target species are captured after 3 consecutive nights, the den shall be excavated and backfilled by hand.
- If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den.
- If an active natal den is detected on the site, the BLM Authorized Officer and CDFW shall be contacted within 24 hours to determine the appropriate course of action to minimize the potential for harm or mortality. The course of action would depend on the age of the pups, location of the den on the site (e.g., is the den in a central area or in a perimeter location), status of the perimeter site fence (completed or not), and the pending construction activities proposed near the den. A 500-foot no-disturbance buffer shall be maintained around active natal dens.
- The following measures are required to reduce the likelihood of distemper transmission:
    a. No pets shall be allowed on the site prior to or during construction, with the possible exception of kit fox scat detection dogs during preconstruction surveys, and then only with prior CDFW approval;
    b. Any kit fox hazing activities that include the use of animal repellents such as coyote urine must be cleared through CDFW prior to use; and
    c. Any documented kit fox mortality shall be reported to CDFW and the BLM Authorized Officer within 24 hours of identification. If a dead kit fox is observed, it shall be retained and protected from scavengers until CDFW determines whether the collection of necropsy samples is justified.

MM-BIO-23. Mitigation and Monitoring Plan: Prior to site disturbance, the project will prepare a desert bighorn sheep mitigation and monitoring plan. The plan will be approved by CDFW and BLM. This plan will require monitoring of wildlife crossings, fencing effectiveness, water sources, and all other implemented mitigation measures for a minimum of 8 years with an annual monitoring report provided to CDFW by January 31, and a final report covering the entire monitoring period (i.e., at least 8 years) by January 31st of the final year. Components of this requirement may be modified if already covered by other monitoring efforts (e.g., Brightline, Caltrans). The plan will include the methods for monitoring, identify what is being monitored, identify the goals of the measures, methods for determining the

effectiveness of the measures, and remedial triggers and measures if the mitigation does not meet the goals.

MM-BIO-24. Limited Operating Period: Noises greater than 85 A-weighted decibels (dBA) maximum sound level (Lmax) will not be allowed within 500 meters of the hinge point (10% slope line) between December 1 and June 30. If loud work must occur, even briefly, then the project must get CDFW concurrence that the desert bighorn sheep lambing period is done or verify, in coordination with CDFW, that there are no desert bighorn sheep on the facing slope within a distance that would be expected to be subject to an 85 dBA Lmax sound level. If the project believes that they may need to ultimately perform loud work during the lambing period, then they shall coordinate with CDFW early (i.e., ideally as soon as possible, but minimally before the lambing period) to determine how much additional desert bighorn sheep-specific monitoring will be needed for CDFW to evaluate whether the request is feasible. Simply monitoring a week or two in advance will not provide enough data to perform the evaluation.

MM-BIO-25. Work Boot Decontamination: All construction personnel will be trained on the importance of and procedures for decontaminating boots to prevent transmission of disease from domesticated sheep and goats to desert bighorn sheep. In addition, all quarry workers who have potential contact with domesticated sheep and/or goats (for example at farms, fairs, etc.) will be identified and shall decontaminate work boots prior to entering the project area. Decontamination shall involve scrubbing the soles of work boots with a 10% bleach solution to remove all organic matter and kill pathogens. Alternatively, footwear may be changed to ensure that potentially contaminated footwear does not enter any quarry area.

MM-BIO-26. Artificial Water Sources: The project will design and install at least five new artificial water sources for desert bighorn sheep to use. The location, design, and method of installations will be determined in cooperation with CEC, CDFW, and BLM and the ultimate plan will be approved by CEC, CDFW, and BLM. The locations may be on private or public lands but must be located within 5 miles of the project boundary to mitigate this metapopulation. Because the I-15 wildlife overcrossing will be installed adjacent to the site, water structure installations should occur on both sides on I-15 with a possible preference for one proximate to the overcrossing structure. The project shall establish a non-wasting endowment to monitor and maintain the water features in perpetuity.

MM-BIO-27. Compensatory Mitigation: If MM-BIO-14 (Desert Tortoise Compensatory Mitigation) is adhered to and occurs within approximately 1 kilometer of desert bighorn sheep-occupied or CDFW-identified/modeled desert bighorn sheep habitat, then no additional compensatory habitat mitigation would be required as the acquired habitat would also satisfy the foraging needs of desert bighorn sheep. However, if the mitigation lands acquired for MM-BIO-12 do not satisfy this requirement, then separate compensatory mitigation for loss of desert bighorn sheep foraging habitat (i.e., all lands east of I-15 that are fenced in) at a 1:1 ratio meeting all of the other requirements (i.e., requirements for acquisition, initial improvement, and long-term management of compensation lands) and protections afforded under MM-BIO-14 will be required.

MM BIO-28: Vegetation Best Management Practices. The applicant shall undertake the following measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to vegetation resources:

- Limit Area of Disturbance. The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to construction activities in consultation with the Designated Biologist. Spoils and topsoil shall be stockpiled in disturbed areas within the project area. Parking areas and staging and disposal site locations shall similarly be located in areas without native vegetation or special-

status species habitat. All disturbances, project vehicles, and equipment shall be confined to the flagged areas.

- Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.
- Minimize Traffic Impacts. Vehicular traffic during project construction and operation shall be confined to existing routes of travel to and from the project area, and cross-country vehicle and equipment use outside designated work areas shall be prohibited.
- Monitor During Construction. In areas that have not been fenced with desert tortoise exclusion fencing and cleared, a Designated Biologist shall be present at the construction site during all project construction activities that have potential to disturb soil, vegetation, and wildlife. The Designated Biologist or Biological Monitor shall review areas immediately ahead of equipment during brushing and grading activities.
- Minimize Impacts of Staging Areas. Staging areas for construction on the project area shall be within the area that has been fenced with desert tortoise exclusion fencing. For construction activities outside of the solar project area, access roads, pulling sites, and storage and parking areas shall be designed, utilized, and maintained with the goal of avoiding or minimizing impacts to native plant communities and sensitive biological resources. Staging areas outside of the project area shall maintain a minimal disturbance footprint, avoid jurisdictional wetlands, and avoid disturbance to native plant communities whenever possible.
- Avoid Use of Toxic Substances. Soil bonding and weighting agents used on unpaved surfaces (per MM 3.2-1) shall be non-toxic to plants and wildlife.
- Implement Erosion Control Measures. All erosion control measures promoted by the Lahontan Regional Water Quality Control Board (RWQCB) in its Project Guidelines for Erosion Control (Board Order No R6T-2003-0-04 Attachment G) (Lahontan RWQCB 2003) shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter "waters of the State." Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into drainages. All disturbed soils and roads within the project area shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes toward a drainage shall be stabilized to reduce erosion potential. To avoid impacts associated with generation of fugitive dust, surface application of water would be employed during construction and operation and maintenance activities.
- Monitor Ground-Disturbing Activities Prior to Preconstruction Site Mobilization. If preconstruction site mobilization requires ground-disturbing activities such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.
- Revegetation of Temporarily Disturbed Areas. The applicant shall prepare and implement a Temporary Disturbance Revegetation Plan to restore all areas subject to temporary disturbance to pre-project grade and conditions. The plan shall be submitted to the BLM and CEC for review and approval at least 30 days prior to the start of ground-disturbing activities. Temporarily disturbed areas within the project area include, but are not limited to, all proposed locations for linear facilities, temporary access roads, berms, areas surrounding the drainage diffusers,

construction work temporary lay-down areas not converted to part of the solar field, and construction equipment staging areas. The Temporary Disturbance Revegetation Plan shall include a description of topsoil salvage and seeding techniques and a monitoring and reporting plan, and plan to achieve the following performance standards by the end of monitoring year 2:

a. At least 80% of the species observed within the temporarily disturbed areas shall be native species that naturally occur in desert scrub habitats; and

b. Relative cover and density of plant species within the temporarily disturbed areas shall equal at least 60% relative to pre-disturbance conditions.

- Integrated Weed Management Plan. This measure provides further detail and clarifies requirements for the applicant's draft IWMP. Prior to beginning construction on the project, the applicant shall prepare, circulate to BLM for comment and approval, and then implement an IWMP that meets the approval of BLM's Authorized Officer and conforms to the CDCA Plan to prevent the spread of existing invasive species and the introduction of new invasive species to the project area. The plan shall be consistent with BLM's *Record of Decision for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States* (BLM 2007) and the *2008-2012 National Invasive Species Management Plan* (National Invasive Species Council 2008). The IWMP shall include, at a minimum, specific management objectives and measures for each target invasive species, baseline conditions, weed risk assessment, measures (both preventative and containment/control) to prevent/limit the introduction and spread of invasive species, monitoring and surveying methods, and reporting requirements. The BLM-approved IWMP shall include:

  a. Preventative measures to prevent the spread of weeds into new habitats, such as equipment inspections, use of weed-free erosion control materials and soils, and a mandatory site training element that includes weed management;

  b. Weed containment and control measures such as the removal of invasive species primarily via mechanical means, with the use of herbicides restricted to BLM-policies and approved usage (e.g., BLM's Herbicide Use Standard Operating Procedures provided in Appendix B of the *Record of Decision for the Final Vegetation Treatments Using Herbicides Programmatic Environmental Impact Statement* (BLM 2007);

  c. Monitoring and reporting standards annually during construction and for 3 years following the completion of construction to describe trends in weed distribution and direct weed management measures, and;

  d. Reporting of monitoring and management efforts in annual reports and a final monitoring report completed at the end of 3 years of postconstruction monitoring. Copies of these reports will be provided to BLM for review and comment. BLM will use the results of these reports to determine whether any additional monitoring or control measures are necessary. Weed control will be ongoing on the project area for the life of the project, but plan success will be determined by BLM after the 3 years of operations monitoring through the reporting and review process. Success criteria will be defined as having no more than a 10% increase in a weed species or in overall weed cover in any part of the project area.

MM BIO-29: Final Closure Plan. At least 12 months prior to project closure, the applicant shall prepare a Final Closure Plan to restore the site's topography and hydrology to a relatively natural condition and to establish native vegetation communities within the project area. The Final Closure Plan shall include a cost estimate for implementing the proposed decommissioning and reclamation activities, and shall cover the estimated cost as though BLM were to contract with a third party to decommission the project and