II.3 PREFERRED ALTERNATIVE

The Preferred Alternative is one of five action alternatives considered and analyzed in the Desert Renewable Energy Conservation Plan (DRECP or Plan) and Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The description of the Preferred Alternative is first provided at an interagency level (Section II.3.1), which describes all plan elements of the alternative. After the interagency description, the individual elements of the alternative are described, including the Bureau of Land Management (BLM) Land Use Plan Amendment (LUPA) elements of the DRECP (Section II.3.2), the Natural Community Conservation Plan (NCCP) elements of the DRECP (Section II.3.3), and the General Conservation Plan (GCP) elements of the DRECP (Section II.3.4).

II.3.1 Interagency Description of the Preferred Alternative

The interagency description of the Preferred Alternative includes the following main sections: Overview of the Preferred Alternative, Conservation Strategy, Monitoring and Adaptive Management Program (MAMP), Description of the Covered Activities, and Plan Implementation. The description of the Preferred Alternative for the DRECP and EIR/EIS encompasses the overall conservation strategy and description of Covered Activities on federal and nonfederal (i.e., state, county, city, and privately owned lands) within the Plan Area.

II.3.1.1 Overview of the Preferred Alternative

The following provides a Plan-wide overview of the Preferred Alternative. The Preferred Alternative integrates renewable energy and resource conservation with other existing uses in the Plan Area and includes BLM LUPA elements, NCCP elements, and GCP elements.

Under the Preferred Alternative for the DRECP and EIR/EIS, a conservation strategy for the Plan Area would be established that includes a streamlined process for the permitting of renewable energy and transmission development on both federal and nonfederal lands and a BLM LUPA providing Conservation and Management Actions (CMAs) for resources throughout the Plan Area on BLM-administered lands. At the broadest Plan-wide level, the Preferred Alternative includes the following components defined below: Development Focus Areas (DFAs), Study Area Lands, and the DRECP Plan-Wide Reserve Design Envelope.

Development Focus Areas (DFAs) represent the areas within which the activities associated with solar, wind, and geothermal development, operation, and decommissioning would be covered under this alternative. Transmission development and operation would occur in previously designated corridors and other identified areas, both inside and outside

the DFAs. Detailed descriptions of Covered Activities for the Preferred Alternative are presented in Section II.3.1.4.

Study Area Lands collectively refer to three mapping categories:

- Future Assessment Areas (FAAs): These represent areas that are subject to future assessment for suitability for renewable energy development or ecological conservation. The knowledge about the value of these areas for renewable energy development is ambiguous. The current known value of these areas for ecological conservation is moderate to low; therefore the areas are not allocated to either development or conservation and are assigned to future assessment and decisions. The DRECP does not cover renewable energy development in FAAs, nor are the FAAs part of specific reserve envelopes within alternatives or ecological conservation designation. FAAs represent areas where solar, wind, and geothermal energy development, operation, and decommissioning, or inclusion in the reserve/ecological conservation designation could be covered through an amendment to the DRECP and permits issued thereunder. Where they occur on federal public lands, these areas would be open to renewable energy development under the BLM Land Use Plan, but would require that an applicant follow a variance process before the BLM would accept their application for processing (see Section II.3.2.1.2 for details of this process). Where they occur on nonfederal lands, these areas would be open to renewable energy development upon amendment of the GCP.
- Special Analysis Areas (SAAs): These represent areas subject to ongoing analysis to inform the designation that is expected to be made for the areas prior to the signing of a National Environmental Policy Act (NEPA) Record of Decision(s) (ROD[s]) and CEQA certification for the EIR/EIS, respectively. The SAAs are known to have high value for renewable energy development and high value for ecological and cultural conservation and recreation. Following further analysis, the SAAs would be designated as either DFAs or included in the DRECP Plan-Wide Reserve Design Envelope in the Final EIR/EIS for the DRECP. Covered Activities in SAAs could be permitted for NCCP purposes only through an NCCP plan amendment. In the absence of an NCCP plan amendment, any renewable energy development in an SAA would have to be permitted for state purposes under the California Endangered Species Act (CESA) not the Natural Community Conservation Planning Act (NCCPA). If these areas are not allocated as DFAs or included in the reserve design envelope in the ROD, where they occur on federal public lands, these areas would default to DRECP Variance Lands and would be subject to those requirements (see Section II.3.2.1.2 for details of this process). Please refer to Appendix M (General Conservation Plan) for a discussion of how SAAs are being treated under the GCP.

- DRECP Variance Lands: These represent the BLM Solar Programmatic Environmental Impact Statement (PEIS) Variance Lands as screened for the DRECP and EIR/EIS based on BLM screening criteria. All lands in this category are managed by the BLM. Covered Activities could be permitted for NCCP purposes only through an NCCP plan amendment. In the absence of an NCCP plan amendment, any renewable energy development in a DRECP Variance Lands would have to be permitted for state purposes under CESA not the NCCPA. These areas would be open to renewable energy development under the applicable BLM Land Use Plan, but would require that an applicant follow a variance process before the BLM will accept their application for processing (See Section B.5 of the BLM's Solar PEIS ROD).

DRECP Plan-Wide Reserve Design Envelope, also referred to as Reserve Design Lands, for the DRECP and EIR/EIS include existing conservation areas, the BLM LUPA conservation designations, and the Conservation Planning Areas within the DRECP Plan-Wide Reserve Design Envelope for each alternative.

- **Existing Conservation Areas.** Areas of existing legislative or legal protection as described in Section I.3.4.4, including Legislatively and Legally Protected Areas (LLPAs) and Military Expansion Mitigation Lands (MEMLs).
- **BLM LUPA Conservation Designations.** Under the BLM LUPA component of the Preferred Alternative, the following conservation designations are proposed as part of the DRECP reserve: National Landscape Conservation System (NLCS), Areas of Critical Environmental Concern (ACECs), and Wildlife Allocations (see Section II.3.2 and Glossary of Terms for descriptions of these designations).
- **Conservation Planning Areas.** The portion of the DRECP Plan-Wide Reserve Design Envelope that occurs outside of existing conservation areas and BLM-administered lands. Conservation Planning Areas encompass both private lands and nonfederal public lands. A portion of the DRECP Conservation Area will be assembled by acquiring land or conservation easements from willing sellers in the Conservation Planning Areas to contribute to meeting the DRECP Biological Goals and Objectives (BGOs).

Additionally, an interagency Plan-Wide Conservation Priority Area was identified through the process of developing the Plan-Wide Reserve Design Envelope (see Section II.3.1.2.4). This area represents the highest priority area for the creation and long-term management of habitat reserves within the DRECP Plan-Wide Reserve Design Envelope for the conservation of the 37 proposed Covered Species and representative examples of the natural communities and processes that support them in the Plan Area. The interagency

Plan-Wide Conservation Priority Area was the basis for the NCCP Conceptual Plan-Wide Reserve Design of each alternative.

The BLM LUPA (Section II.3.2) provides the land use plan amendment description related to these components on BLM-administered lands and other CMAs for resources on BLM-administered lands, and it also describes the Special Recreation Management Areas (SRMAs) designations. The NCCP (Section II.3.3) for federal and nonfederal lands and the GCP for nonfederal lands (Section II.3.4) describe how Covered Activities within these Plan components would be established under the state NCCPA and Section 10(a)(1)(B) of the federal Endangered Species Act (ESA), respectively.

The Plan Area also includes other areas where renewable energy and transmission development and conservation would not be covered occur under the DRECP, including impervious and urban built-up lands, military lands, BLM Open Off-Highway Vehicle (OHV) Areas, the Johnson Valley OHV Shared Use Area, and tribal lands. Exhibit II.3-1 describes the map categories for the Preferred Alternative. Figure II.3-1 provides the Plan-wide map for the Preferred Alternative.

MAP LEGEND DEFINITIONS

NOTE: Legend items defined on this chart represent a compilation of all legend call-outs on the alternatives maps. Not all legend items appear on each individual map.

DEVELOPMENT FOCUS AREAS	
	Development Focus Areas *Locations where renewable energy generation and transmission projects are covered and could be streamlined for approval under the DRECP.*
STUDY AREA LANDS	
	Special Analysis Areas *An interim category used in certain DRECP alternatives to represent areas subject to ongoing analysis to inform the designation (development or conservation) that is expected to be made for the areas prior to agency decisions on the DRECP.*
	Future Assessment Areas *Designated areas in certain action alternatives that are subject to future assessment for suitability for renewable energy development or conservation designation. The knowledge about the value of these areas for renewable energy development is ambiguous. The current known value of these areas for ecological conservation is moderate to low; therefore, the areas are not allocated to either development or conservation and are assigned to future assessment and decisions.*
	DRECP Variance Lands *These represent the BLM Solar PEIS Variance Lands as screened for the DRECP based on BLM screening criteria. The lands are potentially available for renewable energy development, but would not benefit from the DRECP streamlined permitting process.*
RESERVE DESIGN LANDS	
Existing Conservation	
	Legislatively and Legally Protected Areas (LLPAs) *State and federal Wilderness Areas, National Parks, National Preserves, National Wildlife Refuges, California State Parks, CDFW Conservation Areas (Ecological Reserves and Wildlife Areas), CDFW mitigation and conservation easement areas, privately held conservation areas including mitigation banks and land trust lands, and Wilderness Study Areas*
	Military Expansion Mitigation Lands (MEMLs) *Lands conserved as mitigation for the expansion of Department of Defense installations.*
BLM Proposed Land Use Plan Amendment Designations	
	National Landscape Conservation System *Proposed conservation designations on BLM-administered lands with nationally significant resources managed for conservation purposes.*
	Areas of Critical Environmental Concern *Existing and proposed designations on BLM-administered lands of natural or cultural resources determined to require special management attention to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes; or to protect life and safety from natural hazards.*
	Wildlife Allocation *Designations on BLM-administered lands where management emphasizes wildlife values.*
Conservation Planning Areas	
	Conservation Planning Areas *In each action alternative, the portion of the DRECP Plan-Wide Reserve Design Envelope that falls outside of existing conservation areas and BLM-administered lands. A portion of the DRECP Conservation Area will be assembled by acquiring land or conservation easements from willing sellers in the Conservation Planning Areas to contribute to meeting the Plan-Wide Biological Goals and Objectives.*
OTHER LANDS	
	Impervious and Urban Built-up Land *Existing developed areas.*
	Military *Department of Defense installations.*
	Open Off Highway Vehicle (OHV) Areas – Imperial Sand Dunes *BLM Open OHV Areas within the approved Imperial Sand Dunes Recreation Area Management Plan.*
	Open Off Highway Vehicle (OHV) Areas *BLM Land Use Plan designations where motorized and non-motorized uses, including cross-country travel, is permitted.*
	Johnson Valley OHV Shared Use Area *An area adjacent to the Johnson Valley BLM Open OHV Area and Marine Corps Air Ground Combat Center Twentynine Palms designated as a shared use area.*
	Tribal Lands *Native American administered lands.*
	Solar Energy Zones *BLM Solar PEIS established zones of potential solar energy development on BLM-administered lands.*
	Proposed Feinstein Bill *Areas identified for conservation, recreation, and other purposes under the California Desert Protection Act of 2011.*
	DRECP Plan Area Boundary *The DRECP Plan Area including the Mojave and Sonoran/Colorado Deserts and adjacent areas within California.*

Exhibit II.3-1 Map Legend Definitions for the Preferred Alternative

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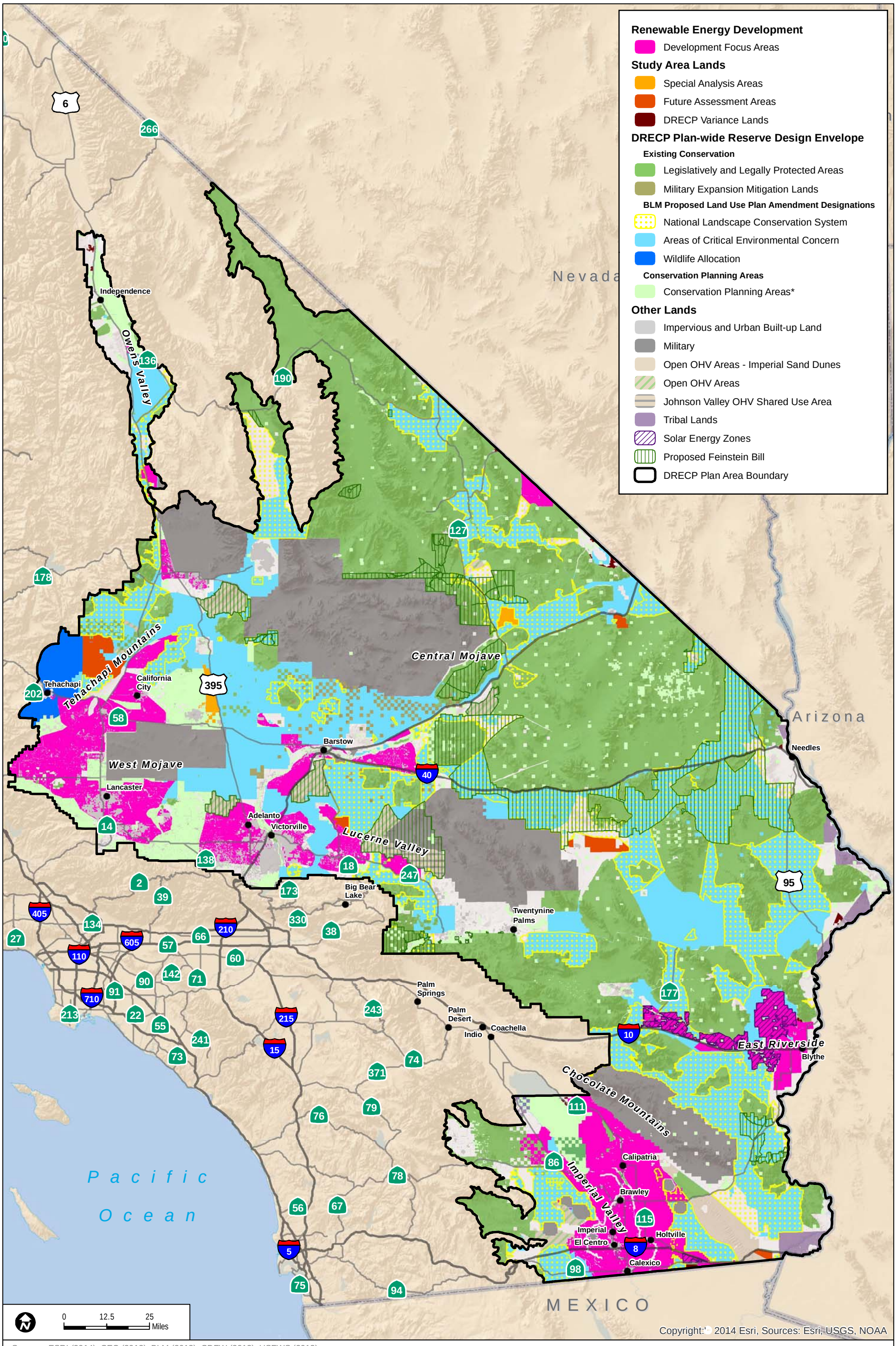

Sources: ESRI (2014); CEC (2013); BLM (2013); CDFW (2013); USFWS (2013)

*The portion of the reserve design outside Existing Conservation Areas and BLM LUPA Conservation Designations on private and non-BLM public lands from which reserve areas will be assembled from willing sellers as compensation for Covered Activities.

FIGURE II.3-1

Interagency Preferred Alternative

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Table II.3-1 provides an overview summary for the Preferred Alternative. In summary, the Preferred Alternative would include approximately 2,024,000 acres of DFAs. Study Area Lands include 128,000 acres of FAAs, 42,000 acres of SAAs, and 13,000 acres of DRECP Variance Lands. The Plan-Wide Reserve Design Envelope would include 7,662,000 acres of existing conservation areas, 6,177,000 acres of BLM LUPA conservation designations, and 1,142,000 acres of Conservation Planning Areas. Of the more than 19 million acres of the Plan Area outside of military lands, BLM Open OHV Areas, and tribal lands, there are approximately 13,565,000 acres of federally owned or administered lands and 5,420,000 of nonfederal lands. The BLM LUPA elements of the Preferred Alternative are described in Section II.3.2, the NCCP elements of the Preferred Alternative are described in Section II.3.3, and the GCP elements of the Preferred Alternative addressing nonfederal lands are described in Section II.3.4. Exhibit II.3-2 graphically displays the components of the Preferred Alternative.

Table II.3-1
Interagency DRECP Plan-Wide Preferred Alternative

Alternative Components	Acreage
DFAs	**2,024,000**
Study Area Lands	**183,000**
Future Assessment Areas	128,000
Special Analysis Areas	42,000
DRECP Variance Lands	13,000
DRECP Plan-Wide Reserve Design Envelope	**14,921,000**
Existing conservation areas	7,662,000
BLM LUPA conservation designations	6,177,000
Conservation Planning Areas	1,142,000
Urban Areas, Other Lands, and Undesignated Areas	**5,457,000**
Impervious and Urban Built-up Land	535,000
Military Lands	3,019,000
BLM Open OHV Areas	264,000
Imperial Sand Dunes, including the BLM Open OHV Area	132,000
Johnson Valley OHV Shared Use Area	56,000
Tribal Lands	129,000
Undesignated Areas	1,323,000
Plan Area Total	**22,585,000**

Notes: This Plan-wide alternative summary includes both federal and nonfederal lands. The summary specific to BLM-administered lands is provided in Section II.3.2 and the summary specific to nonfederal lands is provided in Section II.3.4. Overlaps of BLM LUPA conservation designations with existing conservation areas are reported in the existing conservation area acreages. The BLM LUPA conservation designation acreage reported includes both BLM-administered lands and non-BLM-administered inholdings within the designation. The BLM LUPA would also designate approximately 2,531,000 acres of SRMAs in addition to the 193,000 acres of existing SRMAs, which are BLM designation overlays that overlap portions of the components provided in this table and described in Section II.3.2. Impervious and urban built-up lands occur within BLM LUPA

conservation designations and DFAs where not explicitly included in the urban category reported here. The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

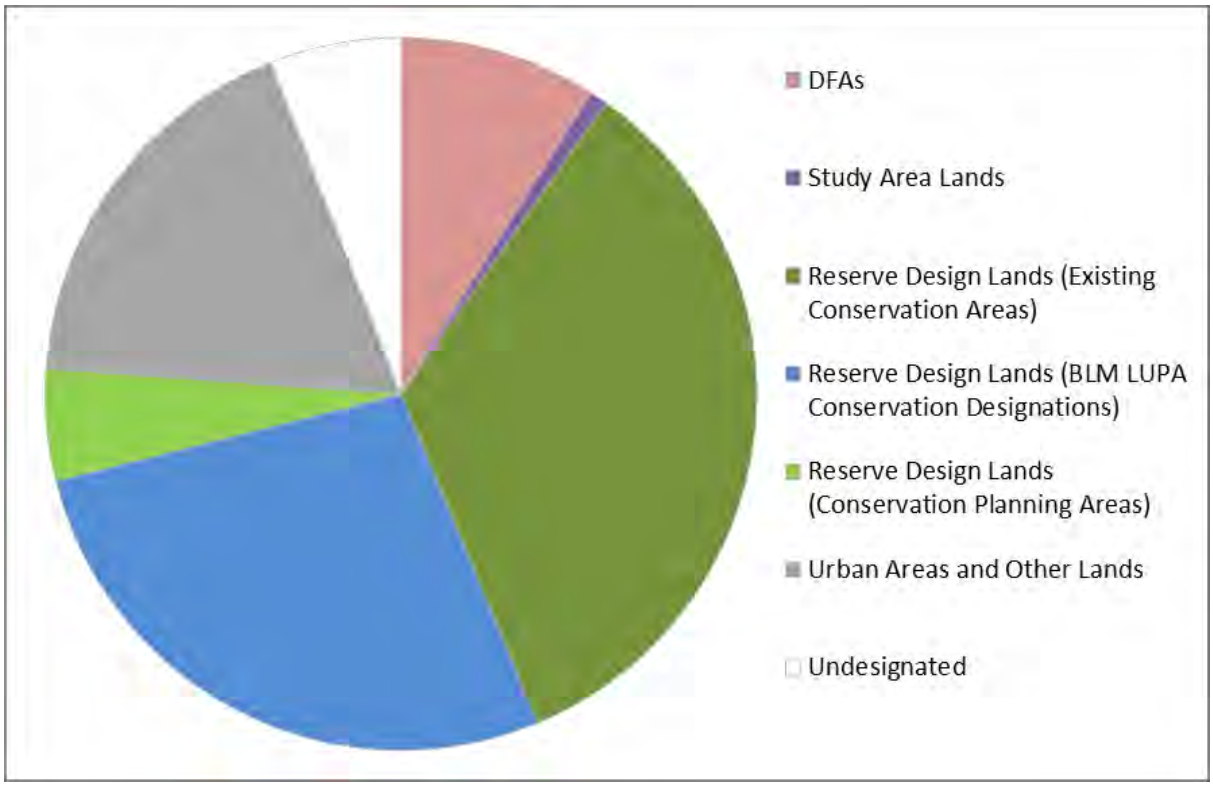


Exhibit II.3-2 Components of the Preferred Alternative

II.3.1.2 Conservation Strategy

The Plan-wide conservation strategy for the DRECP was developed through the planning process described in Volume I, Chapter I.3. The process included: (1) establishing the conservation focus on biological, cultural, recreation, and visual resources; (2) gathering baseline information; (3) identifying BGOs and goals and objectives for nonbiological resources on BLM-administered land; (4) developing a comprehensive reserve design; (4) developing biological CMAs and CMAs for nonbiological resources on BLM land; and (6) developing a MAMP. Sections II.3.1.2 and II.3.1.3 focus on the Plan-wide biological conservation strategy and a MAMP. A description of the nonbiological elements of the reserve design and BLM CMAs can be found in the BLM LUPA section (Section II.3.2).

II.3.1.2.1 Overview of the Structure and Content of the Biological Conservation Strategy for the Preferred Alternative

The following provides an overview of the structure and content of the biological conservation strategy for the Preferred Alternative.

The biological conservation focus (i.e., landscape features, natural communities, and Covered Species) and baseline information for the DRECP biological conservation strategy are described in Volume III, Chapter III.7 (affected environment for biological resources) and the Baseline Biology Report (Appendix Q). The proposed Covered Species for the DRECP are listed in Section II.3.1.2.2.

The DRECP's biological goals are the guiding principles for the DRECP biological conservation strategy. The DRECP's biological objectives provide biological conservation targets or desired conditions that articulate a desired outcome resulting from implementation of the biological conservation strategy. The process for developing the BGOs is described in Section I.3.4.3, which explains the BGOs conceptual model, defines terms, describes the BGOs development process and establishes the hierarchical structure used for the BGOs. The BGOs developed through this process guided the development of the DRECP biological conservation strategy for the Preferred Alternative and are provided in Appendix C. The step-down biological objectives describe the contribution of DRECP implementation towards achieving the Plan-wide BGOs.

The Plan-Wide Reserve Design Envelope for the Preferred Alternative delineates areas that are important for the conservation of landscape features and processes, natural communities, and Covered Species, as guided by the BGOs. The process for developing the reserve design envelope is provided in Section I.3.4.4 and Appendix D. The Reserve Design Lands of the DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative are comprised of:

- Existing Conservation (i.e., LLPAs and MEMLs)
- BLM LUPA conservation designations (i.e., NLCS, ACECs, and Wildlife Allocation)
- Conservation Planning Areas

The CMAs are the set of avoidance, minimization, and compensation actions required to achieve the conservation strategy through plan implementation. The biological CMAs are provided in Section II.3.1.2.5.

The MAMP is a key component of DRECP and is critical to ensuring that the conservation strategy is effective and that the step-down biological objectives are met. The DRECP MAMP is provided in Section II.3.1.3.

The following subsections provide more detailed information on each part of the DRECP biological conservation strategy. The conservation elements specific to the BLM LUPA are detailed in Section II.3.2.

II.3.1.2.2 DRECP Proposed Covered Species List

Covered Species are those species addressed in the DRECP for which CMAs would be implemented and for which nonfederal entities would seek authorization for incidental take under Section 10 of the federal ESA (on nonfederal land) and the NCCP Act. Under the NCCPA, Covered Species are afforded take authorization from Covered Activities and for those species on the list that are not listed at the time of Plan approval. The NCCPA allows California Department of Fish and Wildlife (CDFW) to provide assurances that if they are listed over the life of the permit, no additional mitigation or recovery actions would be required of a project proponent if Plan actions are implemented as prescribed. A total of 37 taxa are considered as Covered Species for the DRECP, as identified in Table II.3-2, and as further described and shown on Figures III.7-16 through III.7-25 in Volume III.

Table II.3-2
Proposed Covered Species List

Common Name	Scientific Name	Federal Status[1]	State Status[2]	CNDDB[3] Conservation Status
Amphibian/Reptile				
Agassiz's desert tortoise	*Gopherus agassizii*	FT	ST	G4 S2
Flat-tailed horned lizard	*Phrynosoma mcallii*	BLM/FS	CSC	G3 S2
Mojave fringe-toed lizard	*Uma scoparia*	BLM	CSC	G3G4 S3S4
Tehachapi slender salamander	*Batrachoseps stebbinsi*	BLM/FS	ST	G2 S2
Bird				
Bendire's thrasher	*Toxostoma bendirei*	BCC/BLM	CSC	G4G5 S3
Burrowing owl	*Athene cunicularia*	BLM	CSC	G4 S2
California black rail	*Laterallus jamaicensis coturniculus*	BCC/BLM	ST/FP	G4T1 S1
California condor	*Gymnogyps californianus*	FE	SE/FP	G1 S1
Gila woodpecker	*Melanerpes uropygialis*	BLM/BCC	SE	G5 S1S2
Golden eagle	*Aquila chrysaetos*	BLM	FP	G5 S3
Greater sandhill crane	*Grus canadensis tabida*	BLM/FS	ST/FP	G5T4 S2
Least Bell's vireo	*Vireo bellii pusillus*	FE/BCC	SE	G5T2 S2
Mountain plover	*Charadrius montanus*	BCC/BLM	CSC	G2 S2?
Swainson's hawk	*Buteo swainsoni*	BLM/FS	ST	G5 S2

Table II.3-2
Proposed Covered Species List

Common Name	Scientific Name	Federal Status[1]	State Status[2]	CNDDB[3] Conservation Status
Tricolored blackbird	*Agelaius tricolor*	FC/BCC/BLM	CSC	G2G3 S2
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FC/FS/BCC/BLM	SE	G5T3Q S1
Willow flycatcher (including southwestern)	*Empidonax traillii (*including *extimus*)	Southwestern: FE	SE	G5 S1S2 Southwestern : G5T1T2 S1
Yuma clapper rail	*Rallus longirostris yumanensis*	FE/BCC	ST/FP	G5T3 S1
Fish				
Desert pupfish	*Cyprinodon macularius*	FE	SE	G1 S1
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	FE	SE/FP	G4T1 S1
Owens pupfish	*Cyprinodon radiosus*	FE	SE/FP	G1 S1
Owens tui chub	*Siphateles (Gila) bicolor snyderi*	FE	SE	G4T1 S1
Mammal				
Desert bighorn sheep	*Ovis canadensis nelsoni*	BLM	FP*	G4T4 S3
California leaf-nosed bat	*Macrotus californicus*	BLM/FS	CSC	G4 S2S3
Mohave ground squirrel	*Xerospermophilus mohavensis*	BLM	ST	G2G3 S2S3
Pallid bat	*Antrozous pallidus*	BLM/FS	CSC	G5 S3
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	CSC/ Candidate	G4 S2S3
Plant				
Alkali mariposa-lily	*Calochortus striatus*	BLM	(CRPR 1B.2)	G2 S2
Bakersfield cactus	*Opuntia basilaris* var. *treleasei*	FE	SE (CRPR 1B.1)	G5T3 S3
Barstow woolly sunflower	*Eriophyllum mohavense*	BLM	(CRPR 1B.2)	G2 S2
Desert cymopterus	*Cymopterus deserticola*	BLM	(CRPR 1B.2)	G2 S2
Little San Bernardino Mountains linanthus	*Linanthus maculatus*	BLM	(CRPR 1B.2)	G2 S2
Mojave monkeyflower	*Mimulus mohavensis*	BLM	(CRPR 1B.2)	G2 S2
Mojave tarplant	*Deinandra mohavensis*	BLM	SE (CRPR 1B.3)	G2G3 S2S3
Owens Valley checkerbloom	*Sidalcea covillei*	BLM	SE (CRPR 1B.1)	G3 S3

Table II.3-2
Proposed Covered Species List

Common Name	Scientific Name	Federal Status[1]	State Status[2]	CNDDB[3] Conservation Status
Parish's daisy	*Erigeron parishii*	FT	(CRPR 1B.1)	G2 S2
Triple-ribbed milk-vetch	*Astragalus tricarinatus*	FE	(CRPR 1B.2)	G1 S1

Notes:
1 Federal Status—FE: Federally Endangered; FT: Federally Threatened; FC: Federal Candidate Species; FS: Forest Service sensitive; BLM: Bureau Land Management sensitive; BCC: Bird of Conservation Concern
2 State Status—SE: State Endangered; ST: State Threatened; CSC: California Species of Concern; FP: Fully Protected; *: limited hunting; CRPR: California Rare Plant Rank. See https://www.cnps.org/cnps/rareplants/ranking.php for an explanation of CRPRs.
3 CNDDB = California Natural Diversity Database. See http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/spplants.pdf, page v for an explanation of these ranks.

Additionally, the DRECP conservation strategy addresses natural communities that occur in the Plan Area. There are 31 natural communities, as identified in Table I.3-3 of Volume I and as further described in Volume III and shown on Figures III.7-3 through III.7-13.

II.3.1.2.3 Biological Goals and Objectives

The Plan-wide BGOs provide the broad guiding principles and define the desired outcome of the conservation strategy. The Plan-wide BGOs are described in Section I.3.4.3 and are provided in Appendix C at the landscape, natural community, and species levels. The Plan-wide BGOs are common to and apply to each of the DRECP alternatives. The Step-down Biological Objectives describe how implementation of the DRECP would contribute to meeting the Plan-wide BGOs. Because the DRECP does not address all activities and uses in the Plan Area, the DRECP cannot bear the full burden of achieving Plan-wide BGOs. For that reason, the Step-down Biological Objectives represent the desired conservation for each biological resource that would result from DRECP implementation. The Step-down Biological Objectives are also provided in Appendix C.

II.3.1.2.4 DRECP Plan-Wide Reserve Design Envelope

The DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative was developed based on the biological reserve design process described in Section I.3.4.4. The DRECP Plan-Wide Reserve Design Envelope is the mapped expression of Plan-wide BGOs. Additionally, an interagency Plan-Wide Conservation Priority Area has been identified. This area represents the highest priority area for the creation and long-term management of habitat reserves for the conservation of the 37 proposed Covered Species and representative examples of the natural communities and processes that support them in the Plan Area. The interagency Plan-Wide Conservation Priority Area was the basis for the NCCP Conceptual Plan-Wide Reserve Design of each alternative.

Overall, the DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative would cover 78% of the Plan Area (excluding military lands, tribal lands, and BLM Open OHV Areas), which includes 7,662,000 acres of existing conservation areas, 6,117,000 acres of BLM LUPA conservation designations, and 1,142,000 acres of Conservation Planning Areas. Over half of the DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative is made up of existing conservation areas (i.e., LLPAs and MEMLs). Approximately 41% of the DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative is made up of existing and proposed BLM LUPA conservation designations including combinations of ACECs, NLCS, and Wildlife Allocations. Approximately 8% of the DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative is comprised of Conservation Planning Areas on private and nonfederal lands.

The interagency Plan-Wide Conservation Priority Area within the reserve design envelope covers approximately 1,847,000 acres. This includes 1,655,000 acres of BLM LUPA conservation designations (1,182,000 acres on BLM-administered lands and 473,000 acres of non-BLM inholdings) and 193,000 acres of Conservation Planning Areas.

The DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative is comprised of an interconnected network of federal and nonfederal lands that spans seven counties, multiple ownerships, and ten ecoregion subareas of the Mojave and Colorado/Sonoran deserts of California. Figure II.3-2 shows the DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative and Appendix G provides figures of the reserve design envelope for each ecoregion subarea in the Plan Area. Table II.3-3 through Table II.3-5 shows the DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative by county, ownership, and ecoregion subarea, respectively.

Table II.3-3
DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative by County

County	Existing Conservation Areas (acres)	BLM LUPA Conservation Designations (acres)	Conservation Planning Areas (acres)	Total Acreage
Imperial	274,000	730,000	137,000	1,141,000
Inyo	1,921,000	612,000	133,000	2,666,000
Kern	135,000	537,000	169,000	841,000
Los Angeles	6,000	33,000	250,000	289,000
Riverside	982,000	605,000	52,000	1,639,000
San Bernardino	4,145,000	3,600,000	395,000	8,140,000
San Diego	199,000	0	6,000	205,000
Total	**7,662,000**	**6,117,000**	**1,142,000**	**14,921,000**

Notes: Overlaps of BLM LUPA conservation designations with existing conservation areas are reported in the existing conservation area acreages. The BLM LUPA conservation designation acreage reported includes both BLM-administered lands and non-BLM-administered inholdings within the designation. These include both existing and proposed conservation

designations. The reserve design envelope also includes an interagency Plan-Wide Conservation Priority Area that covered 1,847,000 acres of BLM LUPA conservation designations and Conservation Planning Areas. The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table

Table II.3-4
DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative by Ownership Class

Ownership Class	Existing Conservation Areas (acres)	BLM LUPA Conservation Designations (acres)	Conservation Planning Areas (acres)	Total Acreage
Federal Lands				
BLM-administered land	3,279,000	4,908,000	-	8,187,000
Other federal land	3,949,000	9,000	62,000	4,021,000
Nonfederal Lands				
Private land	31,000	959,000	807,000	1,798,000
State and local public land	403,000	240,000	272,000	915,000
Total	**7,662,000**	**6,117,000**	**1,142,000**	**14,921,000**

Notes: Overlaps of BLM LUPA conservation designations with existing conservation areas are reported in the existing conservation area acreages. The BLM LUPA conservation designation acreage reported includes both BLM-administered lands and non-BLM-administered inholdings within the designation. These include both existing and proposed conservation designations. The reserve design also includes an interagency Plan-Wide Conservation Priority Area that covered 1,847,000 acres of BLM LUPA conservation designations and Conservation Planning Areas. The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table II.3-5
DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative by Ecoregion Subarea

Ecoregion Subarea	Existing Conservation Areas (acres)	BLM LUPA Conservation Designations (acres)	Conservation Planning Areas (acres)	Total Acreage
Cadiz Valley and Chocolate Mountains	842,000	1,348,000	62,000	2,253,000
Imperial Borrego Valley	355,000	476,000	133,000	964,000
Kingston and Funeral Mountains	1,767,000	524,000	73,000	2,364,000
Mojave and Silurian Valley	786,000	549,000	44,000	1,379,000
Owens River Valley	32,000	158,000	95,000	285,000

Table II.3-5
DRECP Plan-Wide Reserve Design Envelope for the Preferred Alternative by Ecoregion Subarea

Ecoregion Subarea	Existing Conservation Areas (acres)	BLM LUPA Conservation Designations (acres)	Conservation Planning Areas (acres)	Total Acreage
Panamint Death Valley	1,253,000	310,000	16,000	1,578,000
Pinto Lucerne Valley and Eastern Slopes	739,000	494,000	77,000	1,310,000
Piute Valley and Sacramento Mountains	423,000	468,000	27,000	917,000
Providence and Bullion Mountains	1,305,000	770,000	113,000	2,188,000
West Mojave and Eastern Slopes	162,000	1,020,000	502,000	1,684,000
Total	**7,662,000**	**6,117,000**	**1,142,000**	**14,921,000**

Notes: Overlaps of BLM LUPA conservation designations with existing conservation areas are reported in the existing conservation area acreages. The BLM LUPA conservation designation acreage reported includes both BLM-administered lands and non-BLM-administered inholdings within the designation. These include both existing and proposed conservation designations. The reserve design also includes an interagency Plan-Wide Conservation Priority Area that covered 1,847,000 acres of BLM LUPA conservation designations and Conservation Planning Areas. The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Existing Conservation Areas

The Plan Area encompasses existing conservation areas that include LLPAs and MEMLs, which include among other designations Wilderness Areas, Wilderness Study Areas, National Parks, National Preserve, and California State Parks. LLPAs serve as the building blocks of the DRECP reserve design with existing boundaries and management regimes around which the BLM LUPA conservation designations and Conservation Planning Areas were designed. Existing conservation areas are the same for all alternatives. A full description of the existing conservation areas is provided in Section I.3.4.4 under the reserve design process. The existing conservation areas of the reserve design are shown on Figures II.3-2 and the ecoregion subarea maps of the reserve design in Appendix G.

BLM LUPA Conservation Designations

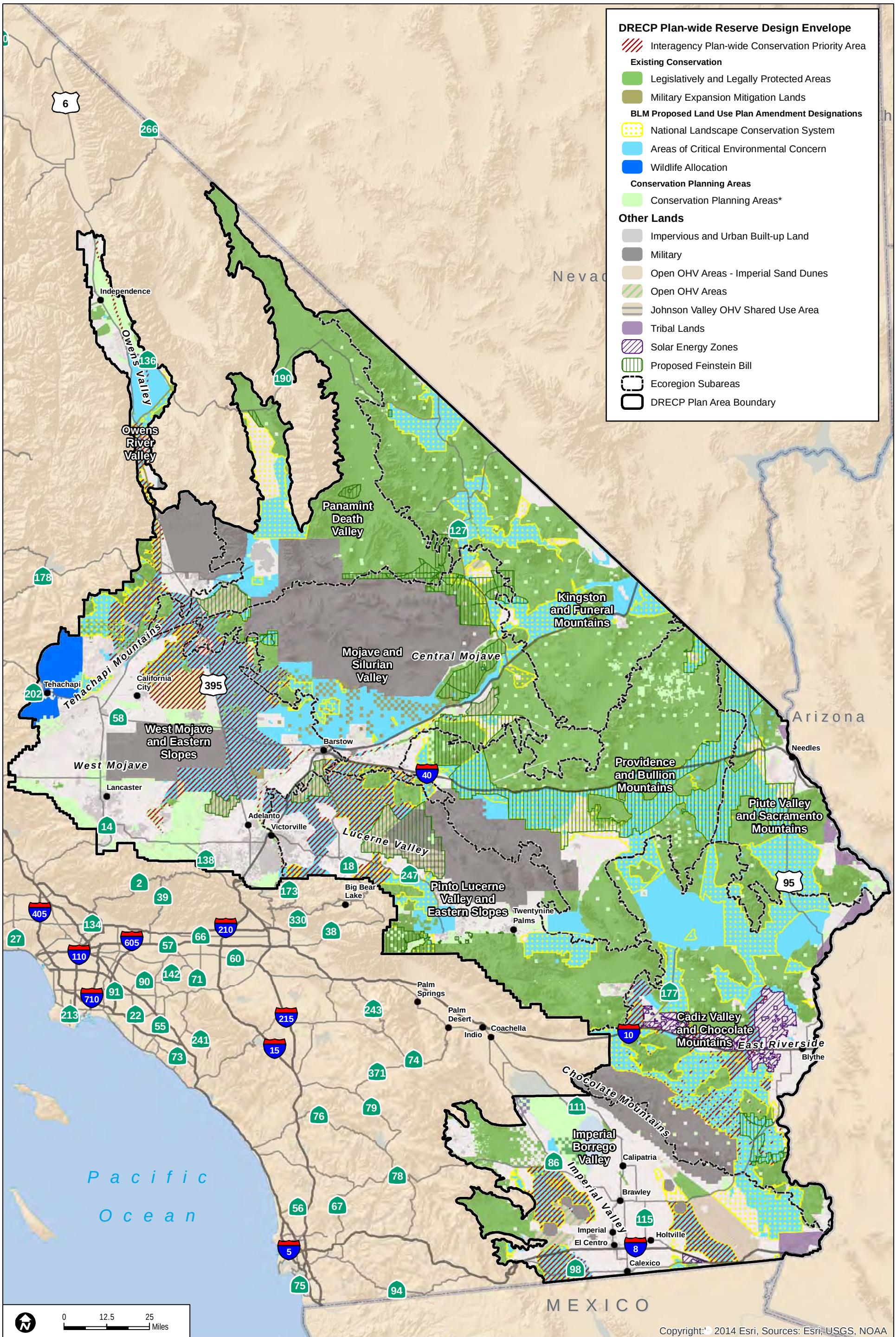
The BLM LUPA conservation designations are a critical component of the reserve design for the DRECP. These include existing and newly proposed NLCS designations, ACEC designations and Wildlife Allocations. The land unit names included in BLM LUPA conservation designations in the reserve design by ecoregion subarea are provided in Section II.3.2 and Appendix L. The BLM LUPA conservation designations component of the reserve design envelope is shown on Figures II.3-2 and the ecoregion subarea maps of the reserve design envelope in Appendix G.

Conservation Planning Areas

Conservation Planning Areas are the portions of the reserve design envelope located outside of existing conservation areas and BLM-administered lands. Conservation Planning Areas include both nonfederal public and private lands. Reserve areas would be created within Conservation Planning Areas by acquiring land or conservation easements from willing sellers to provide compensatory mitigation for Covered Activities to contribute to meeting BGOs. Conservation Planning Areas (and nonfederal inholdings within BLM LUPA conservation designations) within the interagency Plan-Wide Conservation Priority Area have been prioritized for conservation. The Conservation Planning Areas component of the reserve design envelope is shown on Figures II.3-2 and the ecoregion subarea maps of the reserve design envelope in Appendix G.

II.3.1.2.5 Biological Conservation and Management Actions

The biological CMAs are a set of actions that are required for the conservation of the biological resources during implementation of Covered Activities and for the management of the DRECP reserve system in the Plan Area. The CMAs listed in this section describe the specific actions that would be implemented, where and when certain actions would be required, and who is responsible for performing each action. This section also explains the different types of biological CMAs, the organizational structure of the biological CMAs, and the context of the biological CMAs in the overall conservation strategy for DRECP. Additional biological CMA documentation can be found in Appendix H.



Sources: ESRI (2014); CEC (2013); BLM (2013); CDFW (2013); USFWS (2013)

*The portion of the reserve design outside Existing Conservation Areas and BLM LUPA Conservation Designations on private and non-BLM public lands from which reserve areas will be assembled from willing sellers as compensation for Covered Activities.

FIGURE II.3-2

Preferred Alternative - Plan-wide Reserve Design Envelope

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Biological CMAs Context in the Conservation Strategy

The biological CMAs are a critical component of the DRECP biological conservation strategy that serve to avoid and minimize impacts to biological resources, contribute to the assembling of the reserve through compensation for the loss of biological resources, and implement other conservation actions that benefit Covered Species and natural communities within the Plan Area. The BGOs (Appendix C) guided the development of the biological CMAs, will build on the conservation provided by existing conservation areas and BLM LUPA conservation designations to contribute to achieving the DRECP's BGOs. The outcomes of the biological CMAs also inform MAMP actions (Section II.3.1.3), which would monitor both compliance with and effectiveness of the biological CMAs and adapt them as necessary. This iterative process would allow for the continual improvement of the CMAs, based on potential changes in information to provide effective conservation of biological resources in the Plan Area.

Biological CMAs Organization

The biological CMAs described below are incorporated into the alternatives for the LUPA, NCCP, and GCP but will not be repeated in these plan specific sections. These CMAs are designed to be implemented by entities seeking a right-of-way (ROW) grant (for Covered Activities and non-Covered Activities) on BLM land, by BLM implementing activities on its land, and by NCCP and GCP permittees.

The biological CMAs are organized into two main groups that include avoidance and minimization CMAs (Section II.3.1.2.5.1 through Section II.3.1.2.5.6) and compensation CMAs (Section II.3.1.2.5.7). The general purpose, organization, and implementation requirements for each of these categories are described in detail in their individual sections and are summarized below.

- **Avoidance and Minimization CMAs.** These biological CMAs are actions intended to reduce potential impacts to biological resources in the Plan Area. The avoidance and minimization CMAs are generally organized by the type of biological resource that would be affected by Covered Activities; such resources include Covered Species, natural communities, landscape-level processes (e.g., hydrology and habitat linkages), or all biological resources in the Plan Area (Plan-wide CMAs). These CMAs are also further organized by the specific location where the Covered Activities would occur (e.g., in DFAs), and when applicable, by the type of Covered Activity (e.g., solar energy projects) and during what project phase the Covered Activity would occur (e.g., siting, design, construction, operation, and decommissioning phases).

- **Compensation CMAs.** The compensation CMAs are actions that would offset impacts to biological resources due to Covered Activities. These biological CMAs describe the method for calculating compensation requirements, which are based on a standard compensation ratio and compensation ratio exceptions (i.e., for impacts where exceptions to the standard compensation ratio would apply). The compensation CMAs also describe allowable forms of compensation, including acquisition and non-acquisition compensation actions (e.g., habitat restoration or enhancement as described in Appendix H).

In these two categories there are specific biological CMAs that each have a unique biological CMA code that corresponds to that distinct CMA. Exhibit II.3-3 depicts the organizational structure of the biological CMAs and how the CMA coding system follows the division of the two main categories of avoidance and minimization CMAs and compensation CMAs, which are described above. In this exhibit the CMA code for each of these three main categories, and their subsequent subcategories, are shown in brackets. The part of the CMAs code in these brackets identifies either in what part of the biological CMAs structure or in what portion of the document that particular CMA can be found. The CMAs code in the bracket also provides information regarding what biological resources a CMA would apply to or where a specific CMA would apply. For example, the CMA code AM-DFA-BAT-2 identifies that this is an avoidance and minimization CMA, applicable in the DFAs, and is specific to bat Covered Species. Additionally, the CMA code always ends in a number that makes each CMA code unique and applicable to one specific biological CMA.

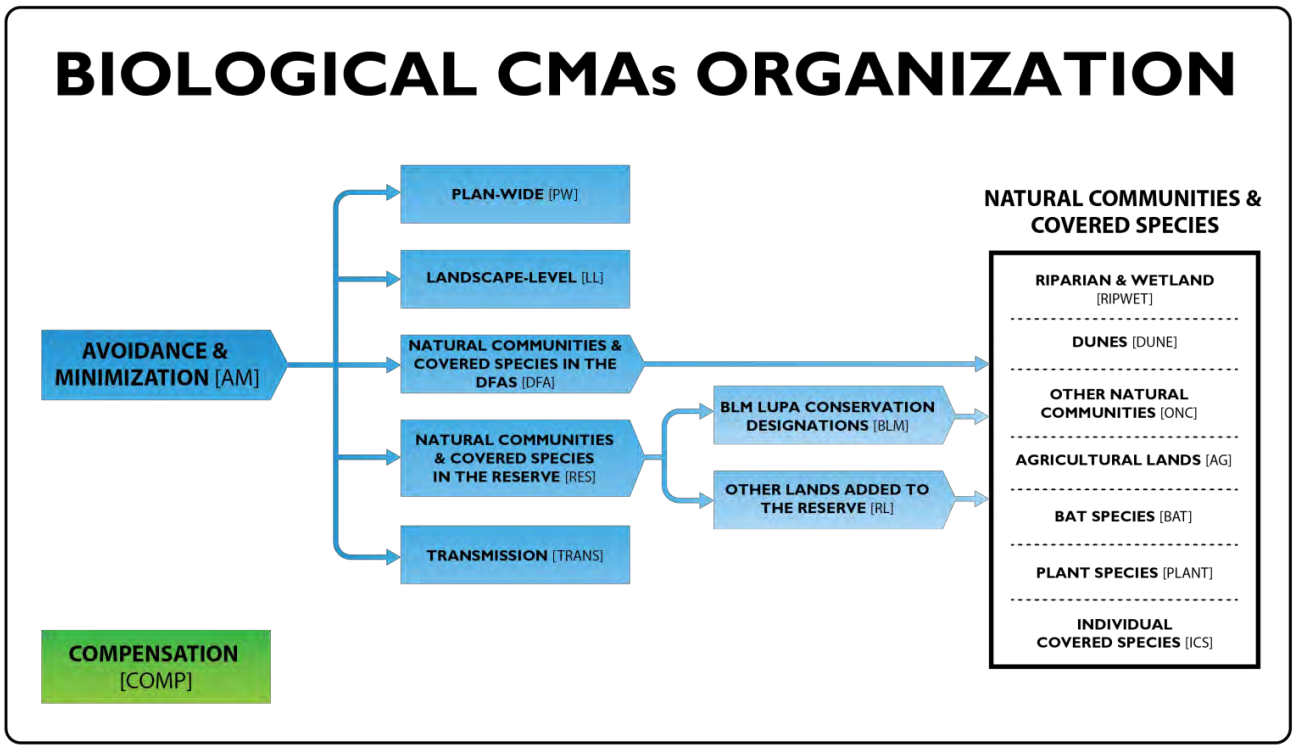


Exhibit II.3-3 Biological CMAs

II.3.1.2.5.1 Avoidance and Minimization CMAs

As described above, the avoidance and minimization biological CMAs are a crucial part of the biological CMAs and the DRECP biological conservation strategy. These biological CMAs are actions that would be implemented as part of Plan implementation and are intended to preclude potential impacts to biological resources or reduce potential impacts to biological resources in the Plan Area resulting from Covered Activities. The avoidance and minimization CMAs follow a similar tiered approach as the BGOs and include Plan-wide, landscape-level, natural community-specific, and species-specific CMAs. In addition to this hierarchical relationship, the avoidance and minimization CMAs are also organized based on the location factors of being within the DFAs or reserve. Both the relational hierarchy and the locational factors of the avoidance and minimization CMAs are described in detail below.

Relational Hierarchy

As shown in Exhibit II.3-3, the avoidance and minimization CMAs have a hierarchical structure similar to the BGOs that is organized by Plan-wide, landscape-level, natural community, and Covered Species CMAs. Plan-Wide CMAs (Section II.3.1.2.5.2) are considered to be "umbrella actions" that would be required for Covered Activities throughout the Plan Area. These CMAs may be considered standard practices for ensuring appropriate conservation and management through implementation of avoidance and minimization for Covered Activities. These avoidance and minimization actions would be a crucial component to conservation and management, along with the compensation and monitoring actions (Section II.3.1.3) for Covered Activities. Landscape-level CMAs (Section II.3.1.2.5.3) would apply to processes that occur over a large geographical extent such as habitat connectivity or Aeolian sand transport and would be required for Covered Activities that could interface with these processes throughout the Plan Area. The avoidance and minimization CMAs that apply to specific natural communities are organized by their location in the DFAs (Section II.3.1.2.5.4) or in the reserve (Section II.3.1.2.5.5). Similarly, avoidance and minimization CMAs for Covered Species are organized by location in the DFAs (Section II.3.1.2.5.4) or the reserve (Section II.3.1.2.5.5). Within both the natural community and Covered Species CMAs for the DFAs and for the reserve, the natural communities and Covered Species are grouped based on their general associations (e.g., Riparian and Wetland Natural Communities and Covered Species). These groupings are identified by a code specific to their grouping (e.g., RIPWET for Riparian and Wetland Natural Communities and Covered Species) and allow for the consolidation of some CMAs, due to the overlap and co-benefits of some avoidance and minimization CMAs to an entire group of natural communities and/or Covered Species.

The avoidance and minimization CMAs structure nests the Covered Species CMAs within the natural community CMAs, the landscape-level CMAs, and the Plan-wide CMAs to the extent possible. For example, at the Plan-wide CMAs scale all Covered Activities would implement standard practices to protect water quality while the landscape-level CMAs would focus on maintaining the function of groundwater flows, surface water flows, and hydrogeomorphic processes that would support the conservation of riparian and wetland areas. Without the Plan-wide and landscape-level efforts to conserve water quality and hydrologic function, the conservation of the riparian and wetland natural communities and Covered Species would not be ensured.

Within both the DFAs and the reserve, the biological CMAs for natural communities and Covered Species are also grouped based on CMAs that overlap and provide co-benefits to the natural communities and Covered Species in that group. For example, the consolidated riparian and wetland natural community grouping contains common setback CMAs for riparian and wetland natural communities that provides conservation benefits to the Covered Species that utilized those habitats. Additionally, the Covered Species generally associated with riparian and wetland areas may be further categorized into subgroups, which share overlapping CMAs that provide co-benefits to each Covered Species in that subgroup. For instance, the riparian and wetland bird Covered Species are grouped together and share common survey requirement CMAs.

This hierarchical structure that groups natural communities and Covered Species and then nests these groupings within the landscape-level and Plan-wide CMAs would sometimes account for all of the avoidance and minimization CMAs for a particular natural community or Covered Species and no additional avoidance and minimization CMAs specific to that natural community or Covered Species would be necessary. For those natural communities or Covered Species that would require additional avoidance and minimization CMAs that were not fully addressed at the Plan-wide or landscape-level, then additional avoidance and minimization CMAs specific to that natural community or Covered Species are provided.

Although transmission projects are considered in the biological CMAs for Covered Activities, there are some instances where additional CMAs could be required to accommodate the specific attributes of transmission as a Covered Activity that would be allowable under the Plan in both the DFAs and reserve. Generally, transmission projects within the DFAs would implement the same biological CMAs for Covered Activities in the DFAs and transmission projects in the reserve would implement the same biological CMAs for Covered Activities in the reserve. The additional CMAs that would apply to transmission projects covered by the Plan throughout the entire Plan Area are included in Section II.3.1.2.5.6 at the end of the avoidance and minimization CMAs.

Locational Factors

The natural community and Covered Species level CMAs are organized based on their location within the DFAs or reserve, as shown in Exhibit II.3-4. Some Covered Activities could require additional or different natural community and/or Covered Species CMAs depending on their location within the DFAs or the reserve. The natural community and Covered Species level CMAs are presented first for Covered Activities that would occur within the DFAs and are organized based on the combined groupings described in Section II.3.1.2.5.4.

For Covered Activities allowed in the reserve (i.e., transmission projects), the applicable natural community and Covered Species level CMAs are described in Section II.3.1.2.5.5. Unless specifically stated otherwise, the CMAs for natural communities and Covered Species in the DFAs would be required to be implemented for transmission projects within the reserve. In some situations the natural community and Covered Species level CMAs for the DFAs would be sufficient for avoidance and minimization of transmission projects in the reserve and no additional natural community or Covered Species level CMAs would be required. In other instances additional natural community and Covered Species level CMAs for transmission projects in the reserve would be required to avoid and minimize potential impacts to certain biological resources. These CMAs are organized between those that apply on the BLM LUPA conservation designations and those that apply on Lands Added to the Reserve (non-BLM LUPA conservation designations). Furthermore, the natural community and/or Covered Species CMAs in this organizational structure could also be subdivided by whether they would be implemented in the siting, design, pre-construction, construction, and decommissioning phase or the operations phase of a project, as applicable.

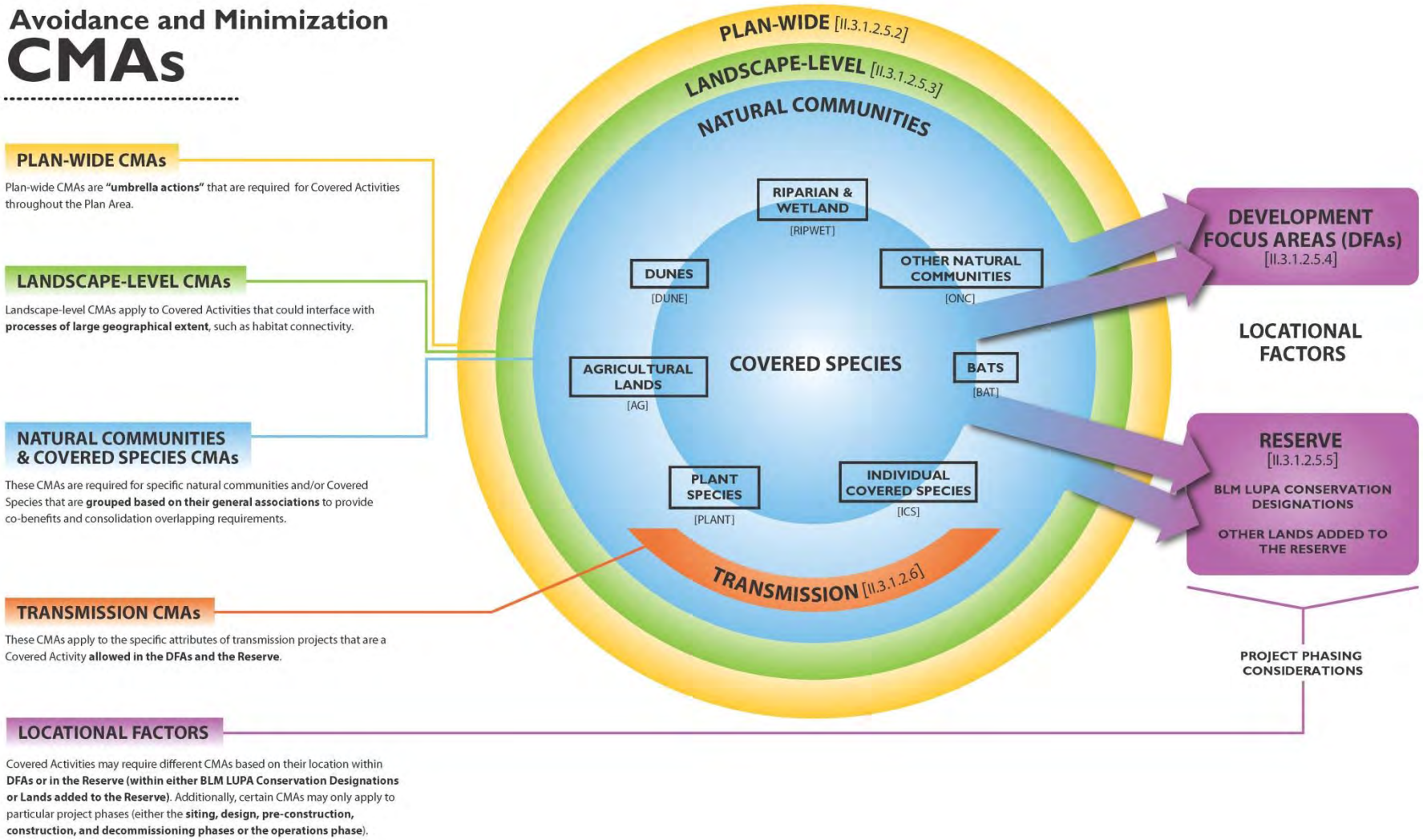


Exhibit II.3-4 Avoidance and Minimization CMAs

II.3.1.2.5.2 Plan-Wide Avoidance and Minimization CMAs

As described above, Plan-wide CMAs are considered to be "umbrella actions" or standard practices for ensuring appropriate conservation and management through implementation of avoidance and minimization for Covered Activities. These CMAs would be required for all Covered Activities throughout the entire Plan Area. As such, the Plan-wide CMAs would provide a consistent level of conservation throughout the Plan Area through a required foundational level of general avoidance and minimization CMAs. These include measures that would benefit biological resources through standard seasonal restrictions, siting and design considerations, techniques to preserve water quality, soil and erosion control measures, methods to control invasive species, and more. The following constitute the Plan-wide avoidance and minimization CMAs:

Survey Requirements and Standards

AM-PW-1: The Covered Species and natural community CMAs will be consulted to determine if specific surveys are required and to determine the specific standards for any Covered Species surveys or natural community assessments. The general process is described below for natural communities and Covered Species.

Natural Communities

- Conduct a habitat assessment (see Glossary of Terms) of natural communities for all Covered Activities using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, CDFW vegetation layers, other sources of digitized data, and reconnaissance site visits) to identify and/or delineate the natural communities, rare alliances, and special features (e.g., Aeolian sand transport resources, Joshua tree, microphyll woodland communities, seeps) present. As specified in the natural community CMAs, site-specific surveys will be conducted to identify and map these special features.

- Comply with the most recent and applicable assessment protocols and guidance documents for natural communities and jurisdictional waters and wetlands that have been approved by the DRECP Coordination Group (see Glossary of Terms) and responsible regulatory agencies (see Appendix H).

Covered Species

- Conduct a habitat assessment (see Glossary of Terms) of species' suitable habitat for all Covered Activities using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat (see Glossary of Terms) for Covered Species. If required by the relevant species specific CMAs, conduct any subsequent protocol or adequate presence/absence surveys to identify Covered Species occupancy status and a more detailed mapping of suitable habitat to inform siting and design considerations.
- If in agricultural lands, conduct a habitat assessment and map burrowing owl habitat (see Section II.3.1.2.5.3 and II.3.1.2.5.4 for burrowing owl CMAs) and assess overwintering habitat characteristics for mountain plover to determine compensation requirements for agricultural land or nonagricultural land.
    - If required by the relevant species specific CMAs, conduct pre-construction surveys (see Glossary of Terms) and/or clearance surveys (see Glossary of Terms) to avoid and minimize direct and indirect effects to Covered Species.
- Implement current survey protocols for applicable Covered Species that have been approved by the DRECP Coordination Group at the time the surveys are required (see Appendix H).
    - Presence/absence survey (see Glossary of Terms) protocols will be submitted to the DRECP Coordination Group for review, comment, and approval prior to implementation.
    - The results of biological surveys, including field data sheets, will be submitted to the DRECP Coordination Group.

Biological Monitoring

AM-PW-2: Designated Biologists (see Glossary of Terms), approved by the DRECP Coordinating Group, will conduct daily biological monitoring during pre-construction, construction, and decommissioning Covered Activities for all work areas associated with Covered Activities to ensure that avoidance and minimization measures are implemented and are effective.

Resource Setback Standards

AM-PW-3: Resource setbacks (see Glossary of Terms) have been identified to avoid and buffer certain resources from adverse effects. Setbacks are not considered additive and are measured as specified in the applicable CMA. Generally, setbacks (which range in distances for different biological resources) for the appropriate resources are measured from:

- The edge of each of the DRECP natural communities, including but not limited to those in the riparian or wetland natural community groups (as defined by alliances within the natural community descriptions and mapped based on the natural community habitat assessments described in **AM-PW-1**).
- The edge of the mapped riparian vegetation or the Federal Emergency Management Agency (FEMA) 100-year floodplain, whichever is greater, for the Mojave River.
- The edge of the agricultural canal or drain feature or the Palos Verde Irrigation District and Imperial Irrigation District ROW for agricultural irrigation system features.
- The edge of the vegetation extent for plant Covered Species.
- The edge of suitable habitat or active nest substrates for the appropriate Covered Species.

Seasonal Restrictions

AM-PW-4: For Covered Species implement all species-specific seasonal restrictions on pre-construction, construction, operations, and decommissioning related Covered Activities.

- Species-specific seasonal restriction dates are described in the applicable Covered Species CMAs.
- Pre-construction, construction, and decommissioning Covered Activities subject to seasonal restrictions will be restricted during the breeding, nesting, lambing, fawning, or roosting seasons of species that are breeding, nesting, lambing, fawning, or roosting within the distance at which noise from construction activities subject to seasonal restrictions would affect them.
- Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis that will result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities subject to seasonal restriction.
- All pre-construction, presence/absence, and clearance surveys as well as any applicable translocation activities will be performed within the appropriate seasonal time frames and in accordance with the most up-to-date guidance approved by the DRECP Coordination Group.

Worker Education

AM-PW-5: All Covered Activities will implement a worker education program that meets the approval of the DRECP Coordination Group. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program will provide interpretation for non-English speaking workers, and provide the same instruction for new workers prior to their working on site. At a minimum, the program will contain information about:

- Site-specific biological and nonbiological resources.
- Information on the legal protection for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with DRECP CMA requirements intended to protect site-specific biological and nonbiological resources.
- The required DRECP and project-specific measures for avoiding and minimizing effects during all project phases.
- Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the Designated Biologist.
- Project-site speed limits and penalties.
- Measures that personnel can take to promote the conservation of biological and nonbiological resources, including looking for animals in open holes and trenches and closing them when not in use or draining evaporation ponds when not in use.

Subsidized Predators Standards

AM-PW-6: Subsidized predator standards, approved by the DRECP Coordination Group, will be implemented during all phases of the project to manage predator food subsidies, water subsidies, and breeding sites including the following:

- Common Raven management actions will be implemented for all projects to address food and water subsidies and roosting and nesting sites specific to the Common Raven. These include identification of monitoring reporting procedures and requirements; strategies for refuse management; as well as design strategies and passive repellant methods to avoid providing perches, nesting sites, and roosting sites for Common Ravens.
- The application of water and/or other palliatives for dust abatement in construction areas and during project operations and maintenance will be done

with the minimum amount of water necessary to meet safety and air quality standards and in a manner that prevents the formation of puddles, which could attract wildlife predators.

- Covered Activities will take actions to not introduce, dispose of, or release any non-native species into areas of native habitat, suitable habitat, and natural or artificial waterways/water bodies.
- All work areas will be kept free of trash and debris. Particular attention will be paid to "micro-trash" (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may subsidize predators. All trash will be covered, kept in closed containers, or otherwise removed from the project site at the end of each day or at regular intervals prior to periods when workers are not present at the site.
- In addition to implementing the measures above on project sites, each project would provide compensatory mitigation that contributes to Plan-wide raven management.

Restoration of Areas Disturbed by Construction Activities But Not Converted by Long-Term Covered Activities

AM-PW-7: Where natural communities or species habitats are affected by ground-disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related Covered Activities but are not converted by long-term (i.e., more than two years of disturbance) ground disturbance, restore these areas following the DRECP Habitat Restoration Standards, approved by the DRECP Coordination Group and following BLM policies and procedures when on BLM-administered lands, prior to natural community or species habitat disturbance, described below:

- Implement site-specific habitat restoration actions for the areas affected by Covered Activities including specifying and using the appropriate seed (e.g., certified weed-free, native, and locally and genetically appropriate seed), materials (e.g., topsoil of the same original type on site or that was previously stored by soil type after being salvaged during excavation and construction activities), equipment, timing (e.g., appropriate season), location (e.g., in the appropriate soil substrate for the species), success criteria, monitoring measures, and contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM administered lands (see Appendix H).
- Minimize natural vegetation removal and cut or mow vegetation rather than removing entirely.

- Salvage and relocate cactus, nolina, and yucca from the site prior to disturbance from Covered Activities using standard protocols and BLM protocols when on BLM administered lands. To the maximum extent practicable for short-term disturbed areas, the cactus and yucca will be re-planted back to the original site.
- Restore and reclaim short-term disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately following completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation.

Closure and Decommissioning Standards

AM-PW-8: All Covered Activities will specify and implement project-specific closure and decommissioning actions that meet the approval of the DRECP Coordination Group, that will be carried out during all phases of the project, and that at a minimum address the following:

- Specifying and implementing the methods, timing (e.g., criteria for triggering closure and decommissioning actions), criteria for success (including quantifiable and measureable criteria), cost, and funding mechanism to ensure sufficient funds are available (e.g., performance bond or similar mechanism) for removal of power plant facilities, transmission projects, roads, fencing, and other infrastructure when they are no longer used or useful and the appropriate restoration of these areas.
- Recontouring of areas that were substantially altered from their original contour or gradient and installing erosion control measures in disturbed areas where potential for erosion exists.
- Storing soil and vegetation as well as restoration of soil profiles that will support and maintain native plant communities and native wildlife species.
- Vegetation restoration actions will identify and use native vegetation composition, native seed composition, and the diversity to values commensurate with the natural ecological setting.

DRECP Standard Practices

The following DRECP Standard Practices would be implemented for Covered Activities during pre-construction, construction, operation, and decommissioning:

Standard Practices for Hydrology and Water Resources

AM-PW-9: Implement the following standard practices for hydrology and water resources:

- Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering natural communities, streams, washes, and distributary networks through water runoff, erosion, and sediment transport by at a minimum implementing the following:
- Vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.
- Hazardous material leaks, spills, or releases will be immediately cleaned and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill.
- Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.
- All Covered Activities will implement project-specific drainage, erosion, and sedimentation control actions, which meet the approval of the DRECP Coordination Group and the applicable regulatory agencies, which will be carried out during all phases of the project. At a minimum these actions will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following:
    - Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.
    - Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.
    - Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.
    - Stabilize disturbed areas following grading by moisturizing and compacting the soils.
    - Minimize irrigation runoff by avoiding the use of non-native vegetation and using low or no irrigation landscaping for landscaped retention basins.

  - Conduct regular inspections and maintenance of long-term erosion control measures to ensure long-term effectiveness.
  - Project sites that may affect intermittent and perennial streams, swales, ephemeral washes, wetland natural communities, other DRECP water land covers, or sites occupied by aquatic Covered Species due to ground water or surface water extraction will conduct hydrologic studies during project planning to determine the potential effect of ground water and surface water extraction on the hydrologic unit. These studies will include both watershed effects as well as effects on the deep aquifer. Projects that are likely to affect ground-water resources in a manner that would result in substantial loss of riparian and wetland natural communities and/or habitat for aquatic Covered Species are prohibited.
  - The use of evaporation ponds for water management will be avoided when the water could harm birds or other terrestrial wildlife due to constituents of concern present in the wastewater (e.g., Selenium, hypersalinity, etc.). Evaporation ponds will be configured to minimize attractiveness to shorebirds (e.g., maintain water depths over two feet; maintain steep slopes along edge; enclose evaporation ponds in long-term structures; or obscure evaporation ponds from view using materials that blend in with the natural surroundings).
- Ramps that allow the egress of wildlife from ponds or other water management infrastructure will be installed.

Standard Practices for Soil Resources

AM-PW-10: Implement the following standard practices for soil resources:

- Implement standard industry construction practices to prevent pollutants from leaching into the soil, minimize water and air erosion of soils, and particulate matter from entering suitable habitat for Covered Species.
- Use construction and installation techniques that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

Standard Practices for Weed Management

AM-PW-11: All Covered Activities will implement integrated weed management actions that meet the approval of the appropriate DRECP Coordination Group, will be carried out during all phases of the project, and at a minimum will include the following:

- Thoroughly clean the tires and undercarriage of vehicles entering or reentering the project site to remove potential weeds.

- Store project vehicles on site in designated areas to minimize the need for multiple washings whenever vehicles re-enter the project site.
- Properly maintain vehicle wash and inspection stations to minimize the introduction of invasive weeds or subsidy of invasive weeds.
- Closely monitor the types of materials brought onto the site to avoid the introduction of invasive weeds and non-native species.
- Reestablish native vegetation quickly on disturbed sites.
- Monitor and quickly implement control measures to ensure early detection and eradication of weed invasions to avoid the spread of invasive weeds and non-native species on site and to adjacent off-site areas.
- Use certified weed-free straw, hay bales, or equivalent fabricated materials for installing sediment barriers.
- Train employees and contractors to carry out the integrated weed management plan and on their role in ensuring the effectiveness of implementing this plan.

Standard Practices for Fire Prevention/Protection

AM-PW-12: Implement the following standard practices for fire prevention/protection:

- Implement site-specific fire prevention/protection actions particular to the construction and operation of renewable energy and transmission project that include procedures for reducing fires while minimizing the necessary amount of vegetation clearing, fuel modification, and other construction-related activities. At a minimum these actions will include designating site fire coordinators, providing adequate fire suppression equipment, and establishing emergency response information relevant to the construction site.

Standard Practices for Noise

AM-PW-13: Implement the following standard practices for noise:

- To the maximum extent practicable locate stationary noise sources away from Covered Species and suitable habitat.
- Schedule construction activities outside of sensitive times for Covered Species (i.e., seasonal restrictions).
- Implement engineering controls on stationary equipment, buildings, and work areas including sound-insulation and noise enclosures to reduce the average noise level.

- Use noise controls on standard construction equipment including mufflers to reduce noise.
- Measures to minimize vehicle and construction equipment idling.

Standard Practices for Siting and Design

AM-PW-14: Implement the following standard practices for siting and design:

- To the maximum extent practicable site and design projects to avoid impacts to natural communities, unique plant assemblages, as well as occupied habitat and suitable habitat for Covered Species (see "unavoidable impacts to resources" in Glossary of Terms). This includes siting, installing, and maintaining transmission line towers/poles, access roads, pulling sites, as well as storage and parking areas adjacent to linear facilities.
- Delineate the boundaries of areas to be disturbed using temporary construction fencing and flagging prior to construction and confine disturbances, project vehicles, and equipment to the delineated project areas to protect natural communities and Covered Species.
- Long-term nighttime lighting on project features will be limited to the minimum necessary for project security, safety, and compliance with Federal Aviation Administration requirements and will avoid the use of constant-burn lighting.
- All long-term nighttime lighting will be directed away from riparian and wetland vegetation, occupied habitat, and suitable habitat areas for Covered Species. Long-term nighttime lighting will be directed and shielded downward to avoid interference with the navigation of night-migrating birds and to minimize the attraction of insects as well as insectivorous birds and bats to project infrastructure.
- To the maximum extent practicable restrict construction activity to the use existing roads and utility corridors to minimize the number and length/size of new roads, laydown, and borrow areas.
- To the maximum extent practicable confine vehicular traffic to existing routes of travel to and from the project site, and prohibit, within project boundaries, cross-country vehicle and equipment use outside of approved designated work areas.
- To the maximum extent practicable construction of new roads and/or routes will be avoided within Covered Species suitable habitat within identified linkages for those Covered Species, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern. These areas will have a goal of "no net gain" of roads.

- To the maximum extent practicable any new road considered within Covered Species suitable habitat within identified linkages for those Covered Species will not be paved and will not negatively affect the function of identified linkages.
- Use nontoxic road sealants and soil stabilizing agents.

Standard Practices for Controlling Nuisance Animals and Invasive Species

AM-PW-15: Implement the following standard practices for controlling nuisance animals and invasive species:

- Covered Activities will not fumigate, use treated bait, or other means of poisoning nuisance animals including rodenticides in areas where Covered Species are known or suspected to occur.
- Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100-year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). On BLM-administered land, manage herbicides consistent with national and California BLM policies.
- Do not rinse herbicide or pesticide spray tanks in or near water bodies.
- Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination.

Standard Practices for Caring for Injured Wildlife

AM-PW-16: Implement the following standard practices for caring for injured wildlife:

- If a Covered Species is injured or discovered as injured during construction, construction activity will be stopped in the vicinity of the animal. Immediately notify the Designated Biologist, who will take the injured animal to a pre-approved wildlife care center or veterinary facility. The Designated Biologist will notify USFWS and CDFW about the injured animal by telephone or email within 24 hours. The applicant will bear all costs associated with the care and treatment of injured animals found on the project site during all project phases.

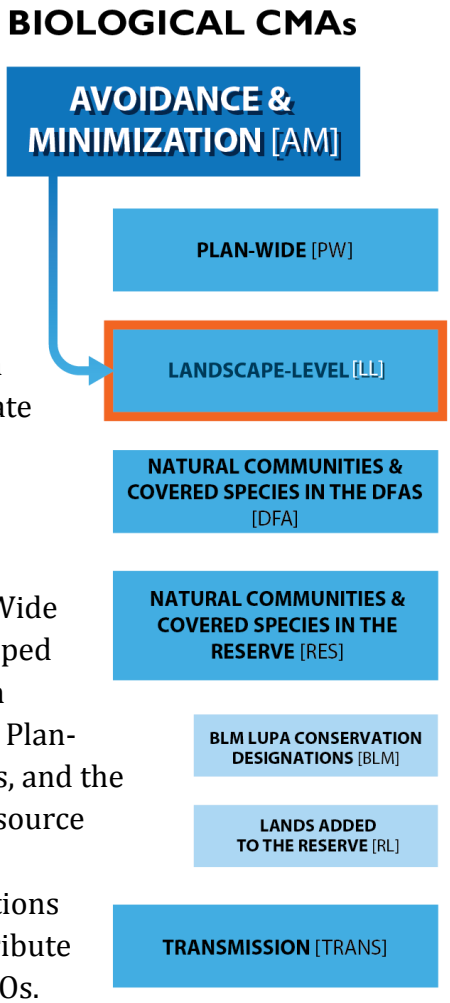
Other General Standard Practices

AM-PW-17: Implement the following other general standard practices:

- Prohibit feeding of wildlife, leaving of food or trash as an attractive nuisance to wildlife, collection of native plants, or harassing of wildlife on the project site.

- Any wildlife encountered during the course of construction will be allowed to leave the construction area unharmed.
- Prohibit domestic pets on the project site. This would not preclude the use of domestic animals (e.g. dogs) that may be used to aid in official and approved monitoring procedures/protocols.
- All construction materials will be visually checked for the presence of wildlife prior to their movement or use.
- All steep-walled trenches or excavations used during the project will be covered, except when being actively used, to prevent entrapment of wildlife. If trenches cannot be covered, exclusion fencing will be installed around the trench or excavation. Open trenches or other excavations will be inspected by a Designated Biologist immediately before backfilling, excavation, or other earthwork.

II.3.1.2.5.3 Landscape-Level Avoidance and Minimization CMAs



At the landscape-level, the Plan-wide BGOs address creating a DRECP-wide, connected, landscape-scale reserve system consisting of large habitat blocks of all constituent natural communities. The reserve system maintains ecological integrity, ecosystem function and biological diversity, maintains natural patterns of genetic diversity, allows adaptation to changing conditions (including activities that are not covered by the Plan), and includes temperature and precipitation gradients, elevation gradients, and a diversity of geological facets to accommodate range contractions and expansions of species adapting to climate change. The mechanisms for contributing to the landscape-level Plan-wide BGOs include:

- **Reserve Design and Assembly –** The DRECP Plan-Wide Reserve Design Envelope for each alternative developed from the reserve design process described in Section I.3.4.4 identifies the areas important for meeting the Plan-wide BGOs for Covered Species, natural communities, and the associated landscape features and processes. The resource protection and management within the BLM LUPA conservation designations and conservation acquisitions within the Conservation Planning Areas would contribute towards achieving the Plan-wide landscape-level BGOs.

Compensation for the impacts of Covered Activities would contribute toward reserve assembly, as described in Section II.3.1.2.5.7 and Appendix H.

- **Implementation of the Plan-wide CMAs –** Many of the Plan-wide CMAs (Section II.3.1.2.5.2) address avoidance and minimization designed to maintain and promote landscape scale processes (e.g., resource setback standards, standard practices for hydrology and water resources, standard practices for soil resources, and standard practices for weed management).
- **Implementation of Landscape-level Biological CMAs –** Landscape-level CMAs have been identified to provide additional avoidance and minimization for specific landscape scale processes, including linkages and connectivity, hydrology, and Aeolian processes.

The following provides the landscape-level biological CMAs.

Linkages and Connectivity

The DRECP Plan-Wide Reserve Design Envelope was developed to capture areas important for habitat linkages and connectivity, and the Plan-wide CMAs were designed to avoid and minimize the effects of Covered Activities on linkages and connectivity. Additionally, the following landscape-level CMAs would be implemented for Covered Activities to avoid and minimize effects to linkages and connectivity, consistent with the linkages depicted in Appendix H. The siting of projects along the edges of these linkages would be configured (1) to maximize the retention of microphyll woodlands and inclusion of other physical and biological features conducive to species' dispersal, and (2) based on available empirical data collected under the MAMP or other sources, including radio telemetry, wildlife tracking sign, and road-kill information.

- **AM-LL-1:** The siting of projects along the edges of the linkages identified in Appendix H (Figures H-1 and H-2) will be configured (1) to maximize the retention of microphyll woodlands and their constituent natural communities and inclusion of other physical and biological features conducive to species' dispersal, and (2) informed by existing available information on modeled Covered Species habitat and element occurrence data, mapped delineations of natural communities, and based on available empirical data collected under the MAMP or other sources, including radio telemetry, wildlife tracking sign, and road-kill information. Additionally, Covered Activities will be sited and designed to maintain the function of Covered

  Species connectivity and their associated habitats in the following linkage and connectivity areas:

  - Within a 5-mile-wide linkage across Interstate 10 centered on Wiley's Well Road to connect the Mule and McCoy mountains.

- Within a 3-mile-wide linkage across Interstate 10 to connect the Chuckwalla and Palen mountains.
- Within a 1.5-mile-wide linkage across Interstate 10 to connect the Chuckwalla Mountains to the Chuckwalla Valley east of Desert Center.
- The confluence of Milpitas Wash and Colorado River floodplain within 2 miles of California State Route 78.

In addition to these specific landscape linkages identified above, the Riparian and Wetland Natural Communities and Covered Species CMAs will contribute to maintaining and promoting habitat connectivity and wildlife movement (see RIPWET under Section II.3.1.2.5.4). The Covered Species CMAs provide additional avoidance and minimization actions for important species-specific habitat linkages (see Section II.3.1.2.5.4).

Hydrology

AM-LL-2: The DRECP Plan-Wide Reserve Design Envelope was developed to capture important hydrologic features, and the Plan-wide CMAs (i.e., the Standard Practices for Hydrology and Water Resources) are designed to avoid and minimize the effects of Covered Activities on hydrologic function. The Plan-wide CMAs will require that the siting and design of Covered Activities maintain the function of natural surface water processes, groundwater processes, hydrogeomorphic processes, and hydrologic regimes. Existing laws and regulations associated with wetlands and water features will also apply to Covered Activities. Additionally, the Riparian and Wetland Natural Communities and Covered Species CMAs will provide additional avoidance and minimization that will contribute to maintaining and promoting hydrologic function (see RIPWET under Section II.3.1.2.5.4).

Aeolian Processes

AM-LL-3: The DRECP Plan-Wide Reserve Design Envelope was developed to capture important sand source, transport, and deposition areas, and the Plan-wide CMAs are designed to avoid and minimize the effects of Covered Activities on Aeolian function. Additionally, the following landscape-level CMAs will be implemented for Covered Activities to avoid and minimize effects to Aeolian processes.

- For Covered Activities that potentially occur within or bordering Aeolian and sand transport corridors, complete studies to verify the accuracy of the DRECP dunes and sand resources mapping as shown in Appendix H and to determine whether the Covered Activities would occur within an Aeolian transport corridor, if the Covered Activities are subject to Aeolian transport corridor requirements, and if the Covered Activities need to be reconfigured to satisfy avoidance requirements. Appendix H

depicts the Aeolian and sand transport areas within the Plan Area; however, the DRECP dunes and sand mapping, DRECP land cover map, DRECP species models, and other data sources considered to be the best available information on Aeolian corridors will be used in this determination.

- Covered Activities and other development in areas that potentially affect the amount of sand entering or transported within Aeolian transport corridors will be designed and operated to maintain the quality and function of Aeolian transport corridors and sand deposition zones (unless related to maintenance of existing facilities), avoid a reduction in sand-bearing sediments within the Aeolian system, and minimize mortality to Covered Species.
- Within Aeolian corridors that transport sand to dune formations and natural communities downwind inside and outside of the DFAs all Covered Activities will be designed and operated to facilitate the flow of sand across development sites, and avoid the trapping or diverting of sand from the Aeolian corridor. Buildings and structures within the site will take into account the direction of sand flow and to the extent feasible build and align structures to allow sand to flow through the site unimpeded. Fence will be designed to allow sand to flow through and not be trapped.
- Any facilities that alter site hydrology (e.g., sediment barrier) will be designed to maintain continued sediment transport and deposition in the Aeolian corridor in a way that maintains the Aeolian sorting and transport to downwind deposition zones. Site designs for maintaining this transport function shall be submitted to the DRECP Coordination Group for approval.

Additionally, the Dune Natural Community and Covered Species CMAs will contribute to maintaining and promoting Aeolian processes (see DUNE under Section II.3.1.2.5.4).

Project-Specific Bird and Bat Operational Actions for Covered Species

AM-LL-4: Proponents of Covered Activities on both federal and nonfederal land that will likely impact bird and bat Covered Species during construction, operation, and maintenance will develop and implement a project-specific bird and bat operational actions for Covered Species. The goal of the project-specific bird and bat operational actions will be to avoid and minimize direct mortality of birds and bats from the construction, operation, and maintenance of the specific wind, solar, geothermal, or transmission project. The project-specific bird and bat operational actions will use applicable state and Wildlife Agency guidelines (such as the USFWS Land-Based Wind Energy Guidelines and the California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development) for operations and address the specific measures for avoidance and minimization, monitoring plans, and reporting requirements for bird and

bat impacts during operations (CEC and CDFG 2007). Bird and bat operational actions will be created on a project-by-project basis by incorporating a variety of available measures that are applicable to the specific project and that together meet the approval of the DRECP Coordination Group for sufficiently avoiding and minimizing, and adaptively monitoring and managing impacts to bird and bat species during operations. Compensation for the impacts of operations on bird and bat Covered Species is addressed under compensation CMAs in Section II.3.1.2.5.7.

The avoidance and minimization measures for impacts to birds and bats during operations will be included in the project-specific bird and bat operational actions for Covered Species. The Plan-wide CMAs (Section II.3.1.2.5.2) include some measures that are typically appropriate for a project-specific bird and bat operational actions including measures that reduce disturbed areas, avoid attracting birds and bats to dangerous project areas, prevent collisions, reduce predator subsidies and perches, as well as limit bird and bat exposure to hazardous materials. The bird and bat operational actions will also address hazards applicable to the specific project including bird and bat collisions with renewable energy infrastructure; inadvertent behavioral changes and mortality due to reflective surfaces that may result in birds mistaking the solar field for a body of water; polarized light pollution; and injury or mortality due to birds and bats coming in contact with the areas above the solar field where elevated levels of solar flux exist. Measures that could be incorporated or appropriately adapted for project-specific bird and bat operational actions include:

- Siting and designing Covered Activities will avoid high bird and bat movement areas that will separate birds and bats from their common nesting and roosting sites, feeding areas, or lakes and rivers.
- During project siting and design, conducting monitoring of bird and bat presence as well as bird and bat use of the project site using the most current survey methods and best procedures available at the time. This pre-project and pre-operations information will serve as the baseline from which to monitor and measure project operations in the future.
- Reusing or co-locate new transmission facilities and other ancillary facilities with existing facilities and disturbed areas to reduce habitat destruction and avoid additional collision risks.
- Avoiding the use of habitat improvements including ponds, guzzlers, rock or brush piles, and bird nest boxes on or near project sites with potential bird and bat hazards.
- Utilizing unguyed monopole towers or tubular towers to reduce Common Raven perches as well as bird and bat collisions.

- Minimizing the use of guywires. Where the use of guywires is unavoidable, demarcating guywires using the best available methods to minimize avian species strikes.
- Evaluation and installation of the best available bird and bat detection and deterrent technologies available at the time of construction. For solar power tower projects, these detection and deterrent systems will be configured to minimize bird species from flying over the site by day, and especially from flying into the project's concentrating radiant flux zone. Passive deterrents may be configured to break up light polarizing surfaces to minimize avian recognition and collision conflicts. For wind projects, a detection and deterrent system will be configured to minimize the potential for bird and bat species flying into the project's rotor swept area.
- Utilizing project designs and project operations that minimize the reflectivity (acoustic and visual/polarizing) and exposure duration of reflective surfaces to avian species (e.g., vertically aligning solar panels during the night and reduced reflectivity resulting from material choices or applications).
- When fencing is necessary, using bird and bat compatible design standards.
- Using lighting that does not attract birds and bats or their prey to project sites including using non-steady burning lights (red, dual red and white strobe, strobe-like flashing lights) to meet Federal Aviation Administration requirements, using motion or heat sensors and switches to reduce the time when lights are illuminated, using appropriate shielding to reduce horizontal or skyward illumination, and avoiding the use of high-intensity lights (e.g., sodium vapor, quartz, and halogen).
- Instituting a vehicle speed limit on the project site to reduce vehicle collision risks with birds and bats.
- Implementing a robust monitoring program to regularly check for wildlife carcasses, document the cause of mortality, and promptly remove the carcasses.
- Installing flight diverters on transmission lines according to the most current Wildlife Agencies guidelines (see **AM-TRANS-2**).
- Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring. This monitoring program will ensure that the information collected during operations is reported to the DRECP Coordination Group in a way that is compatible for use in the MAMP.
- Project-specific operational avoidance and minimization actions that reduce the level of impact on the populations of bird and bat species including:

- Radar detection systems and associated temporary wind turbine shutdown.
- Wind turbine cut-in speed restrictions.

Additional bird and bat operational actions would be required for Covered Activities proposed in the following areas:

- Dry lakes and playas of the north Mojave region, which include China Lake, Koehn Lake, Harper Lake, and Searles Lake (as shown in the Audubon Important Bird Areas on Figure III.7-15)
- Antelope Valley (as shown in the Audubon Important Bird Areas on Figure III.7-15)
- Lower Colorado River Valley (as shown in the Audubon Important Bird Areas on Figure III.7-15)
- The Salton Sea and bordering areas including agricultural land of the Imperial Valley (as shown in the Audubon Important Bird Areas on Figure III.7-15)
- Documented avian movement corridors along the north slope of the San Gabriel and San Bernardino mountain ranges
- Other regionally important seasonal use areas and migratory corridors identified in future studies or otherwise documented in the scientific literature that the DRECP Coordination Group determines applies under this CMA

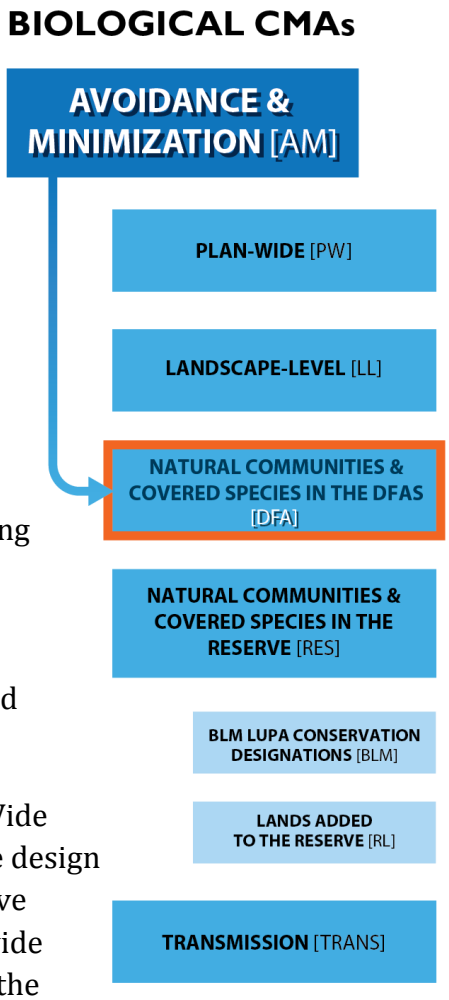
In addition to the bird and bat operation actions listed above, projects proposed in important bird and bat Covered Species areas would be required to develop and implement the following avoidance and minimization actions:

- Projects sited in areas described above would be required to implement best available techniques and technologies that minimize the potential bird and bat mortality during construction and operations, as determined by the DRECP Coordination Group. For example:
    - Use techniques that would minimize attraction of birds to hazardous situations that are mistaken to be or simulate natural habitats (e.g., bodies of water).
    - Implement operational management techniques that minimize impacts to migratory birds during diurnal and seasonal cycles (e.g., positioning of heliostats to decrease surface area exposed to avian species).

The monitoring and adaptive management actions for impacts to birds and bats during operations will be determined by the project-specific bird and bat operational actions. Some measures specific in the MAMP in Section II.3.1.3 may be incorporated into the project-specific bird and bat operational actions as appropriate. The monitoring and reporting aspects of the bird and bat operational actions will be designed to be compatible

with information from any pre-construction or construction surveys and MAMP studies. The bird and bat operational actions will determine the appropriate procedures for monitoring that will provide project-specific information on annual operational effects on birds and bats and that will include triggers that dictate the amount and type of compensation required.

II.3.1.2.5.4 Natural Communities and Covered Species Avoidance and Minimization CMAs in DFAs



At the natural community level, the Plan-wide BGOs are directed toward promoting biodiversity and ecological function within each natural community to benefit covered or native species dependent on, or closely associated with, each natural community. They are also directed toward maintaining well-distributed, inter-connected, and resilient extents of natural communities and their constituent alliances that will persist over time despite the effects of development and climate change. At the Covered Species level, the Plan-wide BGOs are aimed at protecting, managing, and contributing to recovery of viable self-sustaining populations of Covered Species throughout the species' distribution in the Plan Area, including conserving sufficient habitat and resources to adapt to environmental fluctuations and habitat connectivity to facilitate population movement and genetic exchange among populations. The mechanisms for contributing to these natural community and Covered Species Plan-wide BGOs include:

- **Reserve Design and Assembly –** The DRECP Plan-Wide Reserve Design Envelope developed from the reserve design process described in Section I.3.4.4 for each alternative identifies the areas important for meeting the Plan-wide BGOs for Covered Species, natural communities, and the associated landscape features and processes. The resource protection and management within the BLM LUPA conservation designations and conservation acquisitions within the Conservation Planning Areas would contribute towards achieving the Plan-wide BGOs for natural communities and Covered Species. Compensation for the impacts of Covered Activities would contribute towards reserve assembly, as described in Section II.3.1.2.5.7.
- **Implementation of the Plan-Wide CMAs –** Many of the Plan-wide CMAs (Section II.3.1.2.5.2) address avoidance and minimization designed to protect and maintain

natural communities and Covered Species (e.g., resource setback standards, standard practices for hydrology and water resources, standard practices for soil resources, and standard practices for weed management).

- **Implementation of Landscape-level Biological CMAs –** Landscape-level CMAs (Section II.3.1.2.5.3) have been identified to provide additional avoidance and minimization for specific landscape scale processes, that are also designed to protect and maintain certain natural communities and Covered Species.
- **Implementation of the natural community and Covered Species Biological CMAs –** Natural community and Covered Species biological CMAs have been identified to provide specific, additional avoidance and minimization, including CMAs for:
    - *Riparian and Wetland Natural Communities and Covered Species CMAs:* Avoidance and minimization actions specific to the conservation strategy for riparian and wetland natural communities and Covered Species located within the DFAs.
    - *Dune natural communities and Covered Species CMAs:* Avoidance and minimization actions specific to the conservation strategy for dune natural communities and Covered Species located within the DFAs.
    - *Other natural communities CMAs:* Avoidance and minimization actions specific to the conservation strategy for other natural communities not nested within the other CMAs and located within the DFAs.
    - *Agricultural lands Covered Species CMAs:* Avoidance and minimization actions specific to the conservation strategy for agricultural lands Covered Species located within the DFAs.
    - *Bat Covered Species CMAs:* Avoidance and minimization actions specific to the conservation strategy for bat Covered Species located within the DFAs.
    - *Plant Covered Species:* Avoidance and minimization actions specific to the conservation strategy for plant Covered Species located within the DFAs.
    - *Individual Covered Species:* Avoidance and minimization actions specific to the conservation strategy for other individual Covered Species not nested within the other CMAs and located in the DFAs.

The following provides the natural community and Covered Species biological CMAs in DFAs.

Riparian and Wetland Natural Communities and Covered Species (RIPWET)

In addition to the Plan-wide CMAs and applicable landscape-level CMAs, the following CMAs would be implemented within the DFAs for the Riparian and Wetland Natural

Communities and Covered Species listed below. These natural communities and Covered Species are grouped based on their general associations that allow for the consolidation of some CMAs, due to the overlap and co-benefits of some avoidance and minimization CMAs to an entire group of natural communities and/or Covered Species. Other natural communities and/or Covered Species that could have associations or co-benefits with the Riparian and Wetland Natural Communities and Covered Species CMAs may be listed in other CMAs groupings.

Riparian Natural Communities

- Madrean Warm Semi-Desert Wash Woodland/Scrub
- Mojavean Semi-Desert Wash Scrub
- Sonoran-Coloradan Semi-Desert Wash Woodland/Scrub
- Southwestern North American Riparian Evergreen and Deciduous Woodland
- Southwestern North American Riparian/Wash Scrub

Wetland Natural Communities

- Arid west freshwater emergent marsh
- Californian Warm Temperate Marsh/Seep
- North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat
- Southwestern North American Salt Basin and High Marsh

Riparian and Wetland Bird Covered Species

- Willow Flycatcher
- Southwestern Willow Flycatcher
- Least Bell's Vireo
- Western Yellow-billed Cuckoo
- Yuma Clapper Rail
- California Black Rail
- Tricolored Blackbird

Fish Covered Species[1]

- Mohave Tui Chub
- Owens Tui Chub
- Owens Pupfish

Other Riparian and Wetland Covered Species

- Tehachapi Slender Salamander

Common to Riparian and Wetland Natural Community CMAs

AM-DFA-RIPWET-1: The riparian and wetland natural communities and other features listed in Table II.3-6 will be avoided to the maximum extent practicable (see "unavoidable impacts to resources" in the Glossary of Terms) with the specified setback in DFAs.

Table II.3-6
Riparian and Wetland Avoidance and Setbacks

Riparian and Wetland Natural Communities or Features	DFAs Setback[1]
Riparian Natural Communities[1]	
Madrean Warm Semi-Desert Wash Woodland/Scrub	200 feet
Mojavean Semi-Desert Wash Scrub	200 feet
Sonoran-Coloradan Semi-Desert Wash Woodland/Scrub	200 feet
Southwestern North American Riparian Evergreen and Deciduous Woodland	0.25 mile
Southwestern North American Riparian/Wash Scrub	0.25 mile
Wetland Natural Communities[1]	
Arid west freshwater emergent marsh	0.25 mile
Californian Warm Temperate Marsh/Seep	0.25 mile
Other Riparian and Wetland Related Features	
Managed Wetlands[2]	0.25 mile
Mojave River[3]	0.25 mile
Agricultural Drains[4]	25 feet
Undifferentiated Riparian land cover[5]	200 feet

1 Setbacks are measured from the edge of the mapped riparian or wetland vegetation or water feature per AM-PW-3.
2 Setback is from managed wetlands including USFWS Refuges, state managed wetlands, and duck clubs in Imperial Valley. See specifications for the Salton Sea below.

1 Desert pupfish is also a fish Covered Species, but this species is addressed Agricultural Lands Covered Species CMAs

[3] Setback is measured from the edge of mapped riparian or edge of FEMA 100-year floodplain of the Mojave River, whichever is further from the center line of the Mojave River channel.

[4] Setback for agricultural drains is measured from the edge of the drain or the Palos Verdes Irrigation District and Imperial Irrigation District ROW.

[5] Undifferentiated "Riparian" land cover includes portions of major river courses (Mojave River and Colorado River) within the main channels where riparian natural communities were not mapped.

- For unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms) to the riparian natural communities, wetland natural communities, or encroachments on the setbacks listed in Table II.3-6, the following will be required:
  - Written concurrence from the DRECP Coordination Group will be required prior to commencing the unavoidable impacts. Approval from the DRECP Coordination Group will consider previously permitted impacts and conservation for these natural communities, siting and design considerations, and proposed compensation for the unavoidable impacts.
  - Compliance with all applicable laws and regulations pertaining to wetlands and waters would be required prior to commencing the unavoidable impacts.
  - Hydrologic function of the avoided riparian or wetland natural communities will be maintained.
- Unavoidable impacts to the riparian and wetland natural communities or other features including the setbacks listed in Table II.3-6 will occur outside of the avian nesting season, which is from February 1 through August 31.
- The DRECP, and specifically the riparian and wetland natural communities setback for managed wetlands, is intended to be complimentary to the Salton Sea restoration planning effort. The Salton Sea DFA is limited to geothermal projects and surface occupancy from Salton Sea shoreline (average sea level in 2013 at -233 feet below sea level) is the only impact allowed under DRECP. As the Salton Sea recedes, surface occupancy for any technology would need to be analyzed and the Plan would need to be amended if coverage is sought under DRECP.

AM-DFA-RIPWET-2: For North American Warm Desert Alkaline Scrub and Herb Playa and Wet Flat, Southwestern North American Salt Basin and High Marsh, and other undifferentiated wetland-related land covers (i.e., "Playa," "Wetland," and "Open Water"), the following will be required:

- Compliance with all applicable laws and regulations pertaining to wetlands and waters will be required prior to commencing the impacts.
- Hydrologic function of the avoided riparian or wetland natural communities will be maintained.

Riparian and Wetland Bird Covered Species

In addition to the Plan-wide CMAs, landscape-level CMAs, and the Riparian and Wetland Natural Communities CMAs, the following CMAs would be implemented within the DFAs for the bird Covered Species listed below:

- Willow Flycatcher
- Southwestern Willow Flycatcher
- Least Bell's Vireo
- Western Yellow-billed Cuckoo
- Yuma Clapper Rail
- California Black Rail
- Tricolored Blackbird

Common Riparian and Wetland Bird CMAs

Siting, Design, Pre-Construction, Construction, and Decommissioning

- **AM-DFA-RIPWET-3:** For pre-construction, construction, and decommissioning Covered Activities within 0.25 mile of any riparian or wetland natural communities, conduct a pre-construction nesting bird survey for riparian and wetland bird Covered Species according to DRECP-approved protocols.
- Based on the results of the pre-construction nesting bird survey for Covered Activities within 0.25 mile of any riparian or wetland natural communities, setback pre-construction, construction and decommissioning Covered Activities 0.25 mile from active nests of riparian and wetland bird Covered Species during the breeding season (February 1 through August 31).

Operations

- **AM-DFA-RIPWET-4:** Nighttime lighting associated with Covered Activities that are located within 1 mile of riparian or wetland vegetation will strictly comply with DRECP standard practices for siting and design including the proper shielding of lights, as described in Section II.3.1.2.5.2.

Tricolored Blackbird

- **AM-DFA-RIPWET-5:** Setback pre-construction, construction, and decommissioning Covered Activities 0.25 mile from occupied habitat during the breeding season (March 1 through September 1).

Fish Covered Species

In addition to the Plan-wide CMAs, landscape-level CMAs, and the Common to Riparian and Wetland Natural Communities CMAs, the following CMAs would be implemented within the DFAs for the fish Covered Species listed below:

- Mohave Tui Chub
- Owens Tui Chub
- Owens Pupfish

Common Riparian and Wetland Fish Covered Species CMAs

- **AM-DFA-RIPWET-6:** Setback pre-construction, construction, and decommissioning Covered Activities 0.25 mile from the edge of existing or newly discovered occurrences.
- Demonstrate neutral or beneficial long-term hydrologic effects on nearby riparian and wetland habitat as well as fish Covered Species prior to commencing unavoidable pre-construction, construction, and decommissioning Covered Activities.
- **AM-DFA-RIPWET-7:** Site and design Covered Activities to fully avoid operational impacts to existing and newly discovered occurrences, including measures from the applicable recovery plan.

Other Riparian and Wetland Covered Species

In addition to the Plan-wide CMAs, landscape-level CMAs, and the Riparian and Wetland Natural Communities CMAs, the following CMAs would be implemented within the DFAs and for the Other Riparian and Wetland Covered Species listed below:

- Tehachapi Slender Salamander

Tehachapi Slender Salamander

- **AM-DFA-RIPWET-8:** Avoid pre-construction, construction, and decommissioning Covered Activities within 0.25 mile of existing or newly discovered occurrences or suitable habitat.
- **AM-DFA-RIPWET-9:** Construct culverts or other suitable below-grade crossings for new or improved roadways that bisect suitable habitat.
- Construct barriers to reduce at-grade crossings along new or improved roadways that bisect suitable habitat.

Dune Natural Communities and Covered Species (DUNE)

In addition to the Plan-wide CMAs and applicable landscape-level CMAs, the following CMAs would be implemented within the DFAs for the Dune Natural Communities and Covered Species listed below. These natural communities and Covered Species are grouped based on their general associations that allow for the consolidation of some CMAs, due to the overlap and co-benefits of some avoidance and minimization CMAs to an entire group of natural communities and/or Covered Species. Other natural communities and/or Covered Species that could have associations or co-benefits with the Dune Natural Communities and Covered Species CMAs may be listed in other CMAs groupings.

Dune Natural Communities

- North American Warm Desert Dune and Sand Flats

Dune Covered Species

- Mojave Fringe-toed Lizard

Dune Natural Communities

<u>North American Warm Desert Dune and Sand Flats</u>

- **AM-DFA-DUNE-1:** Covered Activities, including transmission substations, will be sited to avoid the dune natural community (i.e., North American Warm Desert Dune and Sand Flats). Unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms) to the dune natural community will be limited to transmission projects, except transmission substations, and access roads that will be sited to minimize unavoidable impacts.
- For unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms) to the dune natural community the following will be required:
- Written concurrence from the DRECP Coordination Group will be required prior to commencing the unavoidable impacts. Approval from the DRECP Coordination Group will consider previously permitted impacts and conservation for these natural communities, siting and design considerations, and proposed compensation for the unavoidable impacts.
- Access roads will be unpaved.
- Access roads will be designed and constructed to be at grade with the ground surface to avoid inhibiting sand transportation.

Dune Covered Species

Mojave Fringe-Toed Lizard

- **AM-DFA-DUNE-2:** Dune formations and other sand accumulations with suitable habitat characteristics (i.e., unconsolidated blow-sand) will be mapped.
- For unavoidable impacts (see "unavoidable impacts to resources" in the Glossary of Terms) into sand transport areas the project will be sited in the mapped zone with the least impacts to sand transport and Mojave fringe-toed lizards.
- **AM-DFA-DUNE-3:** If suitable habitat characteristics are identified during the habitat assessment, clearance surveys for Mojave fringe-toed lizard will be performed in suitable habitat areas.

Other Natural Communities (ONC)

Other natural communities include the forest, woodland, chaparral and coastal scrub communities of the foothill and mountain areas and the desert scrub, woodland, badland, and grassland communities that characterize a majority of the Plan Area and are listed below. These natural communities are grouped based on their general associations that allow for the consolidation of some CMAs, due to the overlap and co-benefits of some avoidance and minimization CMAs to an entire group of natural communities. Other natural communities that could have associations or co-benefits with the Other Natural communities CMAs may be listed in other CMAs groupings.

California Forest and Woodland Natural Communities

- Californian Broadleaf Forest and Woodland
- Californian Montane Conifer Forest

Chaparral and Coastal Scrub Natural Communities

- Californian Mesic Chaparral
- Californian Pre-Montane Chaparral
- Californian Xeric Chaparral
- Central and South Coastal California Seral Scrub
- Central and South Coastal Californian Coastal Sage Scrub
- Western Mojave and Western Sonoran Desert Borderland Chaparral

Desert Conifer Woodland Natural Community

- Great Basin Pinyon-Juniper Woodland

Desert Outcrop and Badland Natural Community

- North American Warm Desert Bedrock Cliff and Outcrop

Desert Scrub Natural Communities

- Arizonan upland Sonoran Desert scrub – Sonoran Desert scrub
- Intermontane Deep or Well-Drained Soil Scrub – Sonoran Desert Scrub
- Intermontane Seral Shrubland
- Inter-Mountain Dry Shrubland and Grassland
- Intermountain Mountain Big Sagebrush Shrubland and steppe
- Lower bajada and Fan Mojavean – Sonoran Desert Scrub
- Mojave and Great Basin Upper Bajada and Toeslope
- Shadscale – Saltbush Cool Semi-Desert Scrub
- Southern Great Basin Semi-Desert Grassland

Grassland Natural Communities

- California Annual and Perennial Grassland
- California Annual Forb/Grass Vegetation

The natural communities that are present within the Plan Area would be partially located and conserved in the reserve. Additionally, each of these natural communities would be protected and managed within the LLPAs and BLM LUPA conservation designations (NLCS, ACEC, Wildlife Allocations) through implementation of the CMAs as well as the values, goals, objectives, and management actions established in the BLM special land allocation management plans. The reserve design and assembly would occur through compensation for the impacts of Covered Activities such as renewable energy and transmission development that would provide an additional conservation for these natural communities in a configuration that contributes to the reserve and achievement of the BGOs.

The Plan-wide CMAs and applicable landscape-level CMAs would be implemented for Covered Activities, which would contribute to avoidance and minimization of impacts to these natural communities. Additionally, implementation of the species-specific CMAs (i.e., bat Covered Species CMAs, plant Covered Species CMAs, and individual Covered Species

CMAs) would benefit the natural communities that support these species. Compensation for impacts to these natural communities would be implemented according to the specifications in Section II.3.1.2.5.7. Furthermore, the following Other Natural Community CMAs would be implemented within the Minimum Requirement DFAs and Moderate Requirement DFAs to provide additional avoidance and minimization from the effects of Covered Activities.

Common Other Natural Communities CMAs

The following CMAs would be implemented to avoid and minimize the impacts of Covered Activities on other natural communities:

- **AM-DFA-ONC-1:** During habitat assessments conducted for all Covered Activities in these natural communities (see Section II.3.1.2.5.2) or as part of plant species survey (see PLANT in Section II.3.1.2.5.4), follow BLM/CDFW guidelines for mapping/surveying cactus, yuccas, and succulents, including barrel cactus (*Ferocactus cylindraceus*), Joshua tree (*Yucca brevifolia*), other BLM Special Status Plants, and other species subject to California Desert Native Plants Act (i.e., California Food and Agricultural Code 80001 et. seq.). Inventory the number or density of the California desert native plant species listed above that would be subject to ground disturbance impacts.
- **AM-DFA-ONC-2:** Develop and implement a set of preservation and/or salvage and transplant actions for the California desert native plant species listed above in **AM-DFA-ONC-1** that will be impacted by ground disturbance activities from Covered Activities. This set of actions will be reviewed and approved by the DRECP Coordination Group.

No additional avoidance and minimization CMAs would be required for Covered Activities specific to the California forest and woodland, chaparral and coastal scrub, desert conifer woodland, desert outcrop and badland, desert scrub, and grasslands natural communities.

Agricultural Lands Covered Species (AG)

In addition to the Plan-wide CMAs and applicable landscape-level CMAs, the following CMAs would be implemented within the DFAs for the following Covered Species that use or are associated with agricultural lands in the Plan Area and are listed below. These Covered Species are grouped based on their general associations that allow for the consolidation of some CMAs, due to the overlap and co-benefits of some avoidance and minimization CMAs to an entire group of Covered Species. Other natural communities and/or Covered Species that could have associations or co-benefits with the Agricultural Lands Covered Species CMAs may be listed in other CMAs groupings.

- Desert Pupfish

- Burrowing Owl
- Mountain Plover
- Greater Sandhill Crane
- Swainson's Hawk

The conservation strategy for Agricultural Lands Covered Species is described in Appendix H. The conservation strategy will contribute to the short and long-term conservation of Covered Species that depend on agricultural lands through the application of avoidance and minimization measures, compensation for impacts to agricultural habitat, employing management actions to enhance habitat value, as well as landscape scale conservation through protection and management.

Application of the following CMAs will protect and benefit these agricultural lands Covered Species. In addition to these CMAs, the avoidance and setback provisions for managed wetlands, the Mojave River, and agricultural drains (see RIPWET in Section II.3.1.2.5.4) would conserve wetland and riparian features within the agricultural matrix and provide conservation benefits to the Covered Species generally associated with agricultural lands. Impacts to agricultural lands will comply with the required compensation for loss of agricultural habitat with a focus on the Imperial Valley, Palo Verde Valley, and West Mojave in particular. Furthermore, Covered Activities will adhere to the applicable conditions of the Agricultural Species Adaptive Management Plan (Section II.3.1.3) that would provide adaptive conservation and management for Covered Species associated with agricultural lands.

Common Agricultural Lands Species CMAs

- **AM-DFA-AG-1:** For the agricultural lands associated Covered Species, the following survey requirements will be implemented in the DFAs as shown in Table II.3-7.

Table II.3-7
Agriculture Covered Species Survey Requirements

Species	DFA Survey Requirements
Desert Pupfish	None (wetland, riparian, and irrigation drain buffers described in riparian and wetland CMAs above).
Burrowing Owl	Breeding season surveys (February 1 through August 31) per Burrowing Owl Guidelines (CDFG 2012). Clearance surveys (for direct take avoidance) no less than 14 days prior to ground disturbance per Burrowing Owl Guidelines.
Mountain Plover	None.

Table II.3-7
Agriculture Covered Species Survey Requirements

Species	DFA Survey Requirements
Greater Sandhill Crane	None.
Swainson's Hawk[1]	Protocol surveys in the Antelope and Owens Valleys.

[1] Surveys throughout the Plan Area will be conducted in accordance with the standards in the 2010 (or newer if updated) CEC and CDFW "Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California."

- **AM-DFA-AG-2:** For the agricultural lands associated Covered Species, Covered Activities will be required to implement the setbacks shown in Table II.3-8 in the DFAs.

Table II.3-8
Agriculture Covered Species Setbacks

Species	Applicable To	DFA Setbacks
Desert Pupfish	None	None.[1]
Burrowing Owl	Solar, Wind, and Geothermal Projects	200 meters from active nesting sites.
Mountain Plover	None	None.
Greater Sandhill Crane	None	None.
Swainson's Hawk	Solar, Wind, and Geothermal Projects	0.5 mile from active nests.[2]
	Other Covered Activities[3]	0.5 mile from active nest during breeding season (February 1 through September 30).

[1] There are no species-specific setbacks for desert pupfish due to the existing setbacks from agricultural drains and wetlands described in the CMA AM-DFA-RIPWET-1.
[2] Some existing Swainson's hawk active nests and their associated setback area are shown in Appendix H.
[3] Other Covered Activities, besides solar, geothermal, and wind projects (such as road construction and road maintenance) can occur within 0.5 mile of an active nest during the non-breeding season or after an active nest is no longer in use for that season. A nest will be considered active if it was used one or more times within the last five years. Determination of the status of a Swainson's hawk nests will happen in collaboration with the appropriate DRECP Coordination Group.

Individual Agricultural Lands Species CMAs

<u>Burrowing Owl</u>

- **AM-DFA-AG-3:** A Designated Biologist (see Glossary of Terms) will conduct biological monitoring (see Glossary of Terms) to ensure avoidance of occupied burrows and establishment of the 200 meter setback to sufficiently minimize disturbance during the nesting period on all project sites.

- **AM-DFA-AG-4:** If burrows cannot be avoided on-site, passive burrow exclusion by a Designated Biologist (see Glossary of Terms) through the use of one-way doors will occur according to the specifications in Appendix H. Before exclusion, there must be verification that burrows are empty as specified in Appendix H. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.
- **AM-DFA-AG-5:** Project-specific active translocation will be considered by the DRECP Coordination Group consistent with the MAMP (Section II.3.1.3). If there is not suitable habitat adjacent to the site, burrowing owls will be translocated to an appropriate habitat if consistent with the MAMP. Any active translocation of burrowing owls must be approved by the DRECP Coordination Group.

Greater Sandhill Crane

- **AM-DFA-AG-6:** Avoid impacts to all greater sandhill crane roosting sites and site Covered Activities away from roosting sites to the maximum extent practicable (see "unavoidable impacts to resources" in the Glossary of Terms).

Swainson's Hawk

- **AM-DFA-AG-7:** Avoid use of rodenticides and insecticides within five miles of active Swainson's hawk nests.

Bat Covered Species (BAT)

In addition to the Plan-wide CMAs, applicable landscape-level CMAs, and the natural community CMAs, the following CMAs would be implemented within the DFAs for bat Covered Species listed below. These Covered Species are grouped based on their general associations that allow for the consolidation of some CMAs, due to the overlap and co-benefits of some avoidance and minimization CMAs to an entire group of Covered Species. Other natural communities and/or Covered Species that could have associations or co-benefits with the Bat Covered Species CMAs may be listed in other CMAs groupings.

- California Leaf-nosed Bat
- Pallid Bat
- Townsend's Big-eared Bat

Common to Bat Covered Species CMAs

- **AM-DFA-BAT-1:** Covered Activities, except wind projects, will not be sited within 500 feet of any occupied maternity roost or presumed occupied maternity roost as described below.
- Wind Projects will not be sited within 0.5 mile of any occupied or presumed occupied maternity roost.
- Mines will be assumed to be occupied bat roosts, unless appropriate surveys for bat use have been conducted during all seasons (including maternity, lekking or swarming, and winter use). Mines not considered potential bat roosts are only those that have no structure/workings (adits or shafts or crevices out of view).

Plant Covered Species (PLANT)

In addition to the Plan-wide CMAs, applicable landscape-level CMAs, and the natural community CMAs, the following CMAs would be implemented within the DFAs for all plant Covered Species. These Covered Species are grouped based on their general associations that allow for the consolidation of some CMAs, due to the overlap and co-benefits of some avoidance and minimization CMAs to an entire group of Covered Species. Other natural communities and/or Covered Species that could have associations or co-benefits with the Plant Covered Species CMAs may be listed in other CMAs groupings.

- Alkali mariposa-lily
- Bakersfield cactus
- Barstow woolly sunflower
- Desert cymopterus
- Little San Bernardino Mountains linanthus
- Mojave monkeyflower
- Mojave tarplant
- Owens Valley checkerbloom
- Parish's daisy
- Triple-ribbed milk-vetch

Common to Plant Covered Species CMAs

- **AM-DFA-PLANT-1:** Conduct properly timed protocol surveys in accordance with the survey protocols listed in Appendix H, the Special Status Plant Management

Manual Handbook for BLM administered lands, or other appropriate survey protocol approved by the DRECP Coordination Group.

- **AM-DFA-PLANT-2:** Implement an avoidance setback of 0.25 mile for all plant Covered Species occurrences. Setbacks will be placed strategically adjacent to occurrences to protect ecological processes necessary to support the plant Covered Species (see Appendix Q, Baseline Biology Report).
- **AM-DFA-PLANT-3:** Impact to suitable habitat (see Glossary of Terms) for the following plant Covered Species within the Plan Area will be capped (see "DRECP disturbance cap" in the Glossary of Terms) in the DFAs as described below in Table II.3-9.

Table II.3-9
Plant Covered Species Suitable Habitat Disturbance Caps

Plant Covered Species	DFA Disturbance Cap
Triple-ribbed milk-vetch	0%
Bakersfield cactus	0% (occupied habitat cap only)
Alkali mariposa-lily	10%
Barstow woolly sunflower, desert cymopterus, Little San Bernardino Mountains linanthus, Mojave monkeyflower, Mojave tarplant, Owens Valley checkerbloom, Parish's daisy	No disturbance cap

Individual Covered Species (ICS)

In addition to the Plan-wide CMAs, applicable landscape-level CMAs, and natural community CMAs, the following CMAs would be implemented within the DFAs for the following Individual Covered Species listed below. These Covered Species are grouped based on their general associations that allow for the consolidation of some CMAs, due to the overlap and co-benefits of some avoidance and minimization CMAs to an entire group of Covered Species. Other natural communities and/or Covered Species that could have associations or co-benefits with the Individual Covered Species CMAs may be listed in other CMAs groupings.

Reptile Covered Species

- Desert Tortoise
- Flat-tailed horned lizard

Bird Covered Species

- Bendire's Thrasher

- California Condor
- Gila Woodpecker
- Golden Eagle

Mammal Covered Species

- Desert Bighorn Sheep
- Mohave Ground Squirrel

Common Individual Covered Species CMAs

- **AM-DFA-ICS-1:** Conduct the following surveys as applicable in the DFAs as shown in Table II.3-10.

Table II.3-10
Individual Species Survey Requirements

Species	DFA Survey Requirements
Reptile	
Desert tortoise[1]	Protocol surveys in the desert tortoise habitat areas indicated in Appendix H.
Flat-tailed horned lizard[1]	Protocol surveys as specified in the Rangewide Management Strategy (RMS).
Bird	
Bendire's thrasher	Pre-construction nesting bird survey during breeding season (March 1 through September 30) in suitable habitat on and within 500 feet of construction zone.
California condor	None.
Gila woodpecker	None.
Golden eagle	Pre-project golden eagle surveys in **AM-DFA-ICS-28** and pre-construction risk assessment surveys in **AM-DFA-ICS-29**, if applicable as described in golden eagle CMAs below.
Mammal	
Desert bighorn sheep	None.
Mohave ground squirrel[1]	Clearance surveys in the Mohave ground squirrel habitat areas indicated in Appendix H. Protocol surveys in population centers and linkages.

[1] See Appendix H for appropriate survey procedures and protocols.

- **AM-DFA-ICS-2:** Implement the following setbacks shown below in Table II.3-11 as applicable in the DFAs.

Table II.3-11
Individual Species Setback Requirements

Species	DFA Setbacks
Reptile	
Desert tortoise	None.
Flat-tailed horned lizard	None.
Bird	
Bendire's thrasher	Setback pre-construction, construction, and decommissioning Covered Activities 500 feet from active nests.
California condor	Setback solar and geothermal projects 1.5 miles from nest sites and out of direct line of site from nest sites. Setback wind and transmission projects 5 miles from nest sites.
Gila woodpecker	Setback pre-construction, construction, and decommissioning Covered Activities 0.25 mile from suitable habitat during the breeding season (April 1 through July 31).
Golden eagle	Setback Covered Activities 1 mile from active or alternative nests within an active territory as described in **AM-DFA-ICS-26**.
Mammal	
Desert bighorn sheep	None.
Mohave ground squirrel	None.

Reptile Covered Species

Desert Tortoise

Siting, Design, Pre-Construction, Construction, and Decommissioning

1. Protocol Surveys and Translocation
   - **AM-DFA-ICS-3:** Protocol surveys, as described in **AM-DFA-ICS-1** and shown in Table II.3-10, would be required for Covered Activities in the desert tortoise survey areas (see Appendix H). The intent of the protocol surveys in the desert tortoise survey areas is to inform the appropriate siting and design of Covered Activities as well as to plan for the translocation of all desert tortoises in potential impact areas on project sites in these areas. Based on the results of the protocol surveys either USFWS will translocate the identified desert tortoises, the project applicant will translocate the identified desert tortoises, or the Covered Activities will be redesigned/relocated as described below:
   - If protocol surveys identify 14 or fewer desert tortoises in potential impact areas on a project site, the USFWS and CDFW will be contacted and provided with the

protocol survey results and information necessary for the translocation of identified desert tortoises. Pre-construction and construction Covered Activities will not begin until the permittee has completed clearance surveys for the project site and the USFWS has translocated the desert tortoises.

- If protocol surveys identify 15 or more desert tortoises in potential impact areas on a project site, the project applicant will be responsible for the appropriate translocation of all identified desert tortoises in coordination with the USFWS and CDFW per the protocols in the Desert Tortoise Field Manual (USFWS 2009) and the most up-to-date USFWS protocol prior to beginning pre-construction and construction Covered Activities. All desert tortoise blood sample collection and health assessments required for translocation planning or other purposes will be performed according to approved USFWS protocols and CDFW guidance.
- If protocol surveys identify an adult desert tortoise density (i.e., individuals 160mm or more) of more than 5 per square mile or more than 35 individuals total on a project site, the project will be required to be redesigned, resited, or relocated to avoid and minimize the impacts of the project on desert tortoise.

2. Siting and Design

- **AM-DFA-ICS-4:** Any area that has been or will be identified as a Tortoise Translocation Area, as part of the DRECP, project requirement, fulfillment of an ESA Section 7 Biological Opinion or Section 10 permit, will be identified as a development avoidance area. No development that requires translocation of tortoises, will be authorized within these areas and they will be managed for the conservation of desert tortoise.
- **AM-DFA-ICS-5:** Covered Activities, except for transmission projects in existing transmission corridors, will avoid the desert tortoise conservation areas (TCAs) and the desert tortoise linkages identified in Appendix H, except the portion of the TCA in the northern Fremont Valley converted to intensive agriculture prior to 2013.
- **AM-DFA-ICS-6:** Covered Activities within desert tortoise linkages identified in Appendix H, will require an evaluation of the effects on the maintenance of long-term viable desert tortoise populations within the affected linkage. The analysis will consider the amount of suitable habitat required to ensure long-term viability within each linkage given the linkage's population density, long-term demographic and genetic needs, degree of existing habitat disturbance, mortality sources, and most up-to-date population viability modeling. Covered Activities that would compromise the viability of a linkage population or the function of the linkage, as determined by the DRECP Coordination Group, are prohibited and would require reconfiguration or resiting.

- **AM-DFA-ICS-7:** Covered Activities will be sited in lower quality desert tortoise habitat in desert tortoise linkages and the Ord-Rodman TCA, identified in Appendix H.
- **AM-DFA-ICS-8:** Construction of new roads and/or routes will be avoided to the maximum extent practicable (see "unavoidable impacts to resources" in the Glossary of Terms) within desert tortoise habitat in tortoise conservation acres or identified tortoise linkages identified in Appendix H, unless the new road and/or route is beneficial to minimize net impacts to natural or ecological resources of concern for desert tortoise. TCAs and identified linkages should have the goal of "no net gain" of road density.
- Any new road considered within a TCA or identified linkage will not be paved and will not negatively affect the function of identified linkages or negatively affect maintaining local desert tortoise populations.
- Roads requiring the installation of long-term desert tortoise exclusion fencing for construction or operation will incorporate wildlife underpasses (e.g., culverts) to reduce population fragmentation.
- **AM-DFA-ICS-9:** All culverts for access roads or other barriers will be designed to allow safe passage of both juvenile and adult desert tortoises. Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages.

3. Exclusion Fencing and Clearance Surveys

- **AM-DFA-ICS-10:** Prior to construction of long-term Covered Activities that are likely to adversely affect desert tortoises in areas where protocol and clearance surveys are required, long-term desert tortoise exclusion fencing will be installed around the perimeter of the project footprint (see Glossary of Terms) in accordance with the Desert Tortoise Field Manual (USFWS 2009) or most up-to-date USFWS protocol. Additionally, short-term desert tortoise exclusion fencing will be installed around short-term construction areas (e.g., staging areas, storage yards, excavations, and linear facilities) per the Desert Tortoise Field Manual (USFWS 2009) or most up-to-date USFWS protocol.
- Covered Activities will construct desert tortoise exclusion fences between November 1 and March 14 to minimize impacts to tortoises and to accommodate subsequent desert tortoise surveys. Exemption or modification of desert tortoise exclusion fencing requirements may be obtained from the DRECP Coordination Group on a case-by-case basis. The DRECP Coordination Group may require substitute measures, such as on-site biological monitors in the place of the fencing requirement.

- Within 24 hours prior to desert tortoise exclusion fence construction, a Designated Biologist (see Glossary of Terms) will conduct a clearance survey of the fence alignment to clear desert tortoises from the proposed fence line's path.
- All desert tortoise exclusion fencing will incorporate desert tortoise proof gates or other approved barriers to prevent access of desert tortoises to work sites through access road entry points.
- Following installation, long-term desert tortoise exclusion fencing will be inspected quarterly.
- All damage to long-term or short-term desert tortoise exclusion fencing will be immediately blocked to prevent desert tortoise access and repaired within 72 hours.
- Desert tortoise exclusion fencing will be checked for damage when there is surface flow of water due to a rain event that may damage the fencing.
- **AM-DFA-ICS-11:** Following fencing of project footprints or short-term construction areas with desert tortoise exclusion fencing, clearance surveys covering the entire fenced area will be performed to remove all remaining desert tortoises.
- Clearance surveys in areas enclosed by desert tortoise exclusion fencing will be performed by a Designated Biologist (see Glossary of Terms) within 72 hours of fencing when tortoise are above ground, otherwise seasonally active, or following a rain event.
- The USFWS or project applicant (see **AM-DFA-ICS-3**) is responsible for translocating all desert tortoises found during clearance surveys off site per the protocols in the Desert Tortoise Field Manual (USFWS 2009) or the most up-to-date USFWS protocol prior to beginning pre-construction or construction Covered Activities within the enclosed areas. All desert tortoise blood sample collection and health assessments required for translocation planning or other purposes will be performed according to approved USFWS protocols and CDFW guidance.

4. Construction Monitoring and Practices

- **AM-DFA-ICS-12:** Following the clearance surveys within projects sites that are fenced with long-term desert tortoise exclusion fencing (as described in **AM-DFA-ICS-11**), a Designated Biologist (see Glossary of Terms) will monitor initial clearing and grading activities to ensure that desert tortoises missed during the initial clearance survey are moved from harm's way.
- A Designated Biologist will inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more

nights, (c) less than 8 inches aboveground and (d) within desert tortoise habitat (such as, outside the long-term fenced area), before the materials are moved, buried, or capped.

- As an alternative, cap such materials before storing outside the fenced area or placing on pipe racks. Pipes stored within the long-term fenced area after completing desert tortoise clearance surveys will not require inspection.
- **AM-DFA-ICS-13:** When working in desert tortoise habitat in areas where protocol or clearance surveys are required, biological monitoring will occur with any geotechnical boring or geotechnical boring vehicle movement to ensure no desert tortoises are killed or burrows are crushed.
- **AM-DFA-ICS-14:** Inspect the ground under the vehicle for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat outside of areas fenced with desert tortoise exclusion fencing. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a Designated Biologist may remove and relocate the animal to a safe location.

AM-DFA-ICS-15: Ensure vehicular traffic will not exceed 25 miles per hour within the delineated project areas or on access roads in desert tortoise habitat. Operations

- Implement **AM-DFA-ICS-14** and **AM-DFA-ICS-15** during operations.

Flat-Tailed Horned Lizard

- **AM-DFA-ICS-16:** Comply with the conservation goals and objectives, criteria, and management planning actions identified in the most recent revision of the Flat-tailed Horned Lizard Rangewide Management Strategy (RMS).
- Covered Activities will include appropriate design features using the most current information from the RMS and RMS Interagency Coordinating Committee to minimize adverse impacts during siting, design, pre-construction, construction, and decommissioning; ensure that current or potential linkages and habitat quality are maintained; reduce mortality; minimize other adverse impacts during operation; and ensure that Covered Activities have a neutral or positive effect on the species.

Bird Covered Species

Bendire's Thrasher

Operations

- **AM-DFA-ICS-17:** If Bendire's thrasher is present, conduct biological monitoring (see Glossary of Terms) to ensure that Bendire's thrasher individuals are not

directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings).

California Condor

Siting, Design, Pre-Construction, Construction, and Decommissioning

- **AM-DFA-ICS-18:** Avoid direct contact and take of California condors.
- If a condor is identified at a construction site, the Designated Biologist (see Glossary of Terms) will immediately notify the DRECP Coordination Group.
- Any actions taken to encourage condors to leave an area that may result in harassment of the bird will be conducted by a Designated Biologist (see Glossary of Terms).
- **AM-DFA-ICS-19:** Flight activity (e.g., surveys, construction, as well as operation and maintenance activities) related to Covered Activities will not be allowed in the airspace extending to 3,000 feet above condor nest sites.
- **AM-DFA-ICS-20:** Structures supported by guy wires will be marked with recommended bird deterrent devices at the appropriate spacing intervals.
- **AM-DFA-ICS-21:** All equipment and work-related materials (including loose-wires, open containers or other supplies or materials) will be contained in closed containers either in the work area or placed inside vehicles.
- **AM-DFA-ICS-22:** When feasible, ethylene glycol-based anti-freeze or other ethylene glycol-based liquid substances will be avoided, and propylene glycol-based antifreeze will be used. Vehicles and equipment using ethylene glycol based substances will be inspected before and after field use as well as during storage on project sites for leaks and puddles. Standing fluid will be remediated without unnecessary delay.

Operations

Implement **AM-DFA-ICS-18** through **AM-DFA-ICS-22** during operations, in addition to the following:

- **AM-DFA-ICS-23:** Covered Activities with the potential to take condors should consult with the DRECP Coordination Group to evaluate a project's risk to condors given the project location, technology, and current status of the condor population. Covered Activities that are determined to have a potential risk of taking condors will implement the best detect, deter, and curtailment strategy available at the time of construction to assure no take of condors. The strategy must be approved by the DRECP Coordination Group.

- **AM-DFA-ICS-24:** If condors begin to regularly visit a project site, the following additional measures will be implemented:
- Barriers, including welded wire fabric or hardware cloth, will be installed to prevent access around any facility element that poses a danger to condors.
- Stainless steel lines, rather than poly chemical lines will be used to preclude condors from obtaining and ingesting pieces of poly chemical lines.
- Landing deterrents, including Daddi Long Legs or porcupine wire, will be attached to the walking perching substrates.
- **AM-DFA-ICS-25:** A Condor Operations Strategy (COS) will be developed and implemented on a project-specific basis with the goal of avoiding mortality from operations of Covered Activities. No take of condor will be permitted in the form of kill or injury from operation of Covered Activities.

Golden Eagle

The USFWS has determined that it can authorize some take of golden eagles each year for activities in the Plan Area. Based on the 2013 analysis, the number of golden eagles that could be taken in the Plan Area in 2014 would be 15; however, the number is to be calculated annually and will go up or down depending on factors such as implementation of projects that take golden eagles inside or outside the Plan Area and the population status of golden eagles. The following CMAs would be implemented to avoid and minimize the take of golden eagles from the siting, construction, operations and decommissioning of Covered Activities under the DRECP. The approach to determining Golden Eagle coverage in the DRECP is described in further detail in Appendix H.

Siting, Design, Pre-Construction, Construction, and Decommissioning

- **AM-DFA-ICS-26:** Provide protection from loss and harassment of active nests through the following actions:
- Covered Activities will not be sited or constructed within 1-mile of any active or alternative golden eagle nest within an active golden eagle territory (see Appendix H).
- For active nests with recreational conflicts that risk the occurrence of take, provide public notification (e.g., signs) of the sensitive area and implement seasonal closures as appropriate.
- **AM-DFA-ICS-27:** Loss of habitat within a 1 to 4 mile radius around active or alternative eagle nests will be limited to less than 20% (see "DRECP disturbance cap" in the Glossary of Terms).

- **AM-DFA-ICS-28:** If the DRECP Coordination Group and approving agencies determine take of golden eagle is reasonably foreseeable or there is a potential for take of golden eagle, conduct 2 years of pre-project golden eagle surveys (per Pagel et al. 2010).
- **AM-DFA-ICS-29:** Wind projects and solar projects involving a power tower will conduct 2 years of pre-construction risk assessment surveys per USFWS Eagle Conservation Plan Guidance. These surveys will be conducted in addition to, and may be conducted concurrently with, the pre-project golden eagle surveys described above in **AM-DFA-ICS-28**, if applicable.
- **AM-DFA-ICS-30:** Project proponents of Covered Activities will conduct a risk assessment per the USFWS Eagle Conservation Plan Guidance using available information as well as the data collected in the pre-project golden eagle surveys in **AM-DFA-ICS-28** and pre-construction risk assessment surveys in **AM-DFA-ICS-29**, if applicable.
- **AM-DFA-ICS-31:** Implement site-specific golden eagle mortality monitoring in support of the pre-construction risk assessment surveys described in **AM-DFA-ICS-29.**
- **AM-DFA-ICS-32:** If a permit for golden eagle take is determined to be necessary, the information gathered in **AM-DFA-ICS-28**, **AM-DFA-ICS-29**, and **AM-DFA-ICS-30** will be submitted together as an application.

Operations

- **AM-DFA-ICS-33:** For Covered Activities where ongoing take of golden eagles is anticipated, develop advanced conservation practices per USFWS Eagle Conservation Plan Guidance and the Appendix H.

Mammal Covered Species

Desert Bighorn Sheep

Within DFAs on BLM-administered lands Desert Bighorn Sheep CMAs would be implemented to the extent feasible and allowable under existing permits, leases, and allotment plans.

- **AM-DFA-ICS-34:** Access to, and use of, designated water sources will not be affected by Covered Activities in designated and new utility corridors.
- **AM-DFA-ICS-35:** Transmission projects and new utility corridors will minimize effects on access to, and use of, designated water sources.

Mohave Ground Squirrel

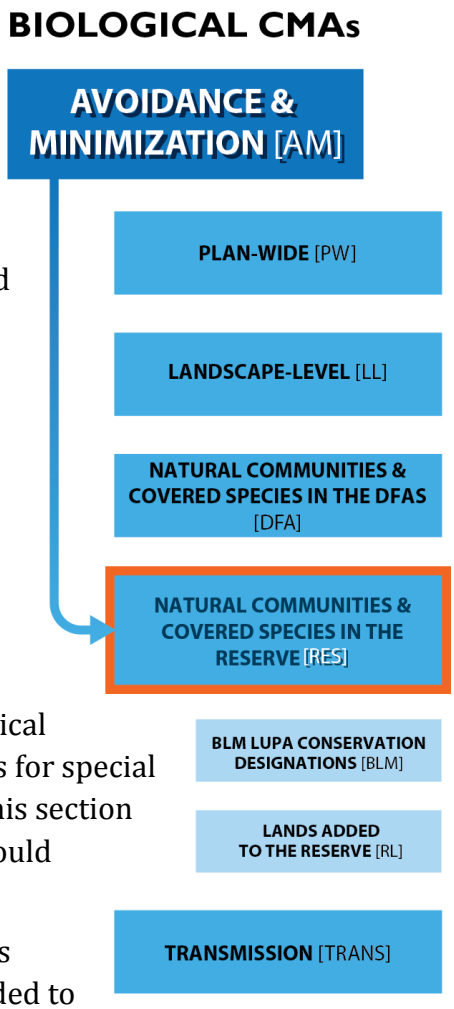
Siting, Design, Pre-Construction, Construction, and Decommissioning

- **AM-DFA-ICS-36:** During the typical active season (February 1 through August 31), conduct clearance surveys throughout the project site, immediately prior to initial ground disturbance in the areas depicted in Appendix H. In the cleared areas, perform construction monitoring to determine if squirrels have entered cleared areas. Contain disturbance to within cleared areas.
- Detected occurrences of Mohave ground squirrel will be flagged and avoided, with a minimum avoidance area of 50 feet, until the squirrels have moved out of harm's way. A Designated Biologist (see Glossary of Terms) may also actively move squirrels out of harm's way.
- **AM-DFA-ICS-37:** Protocol surveys (see Glossary of Terms) would be required for Covered Activities in Mohave ground squirrel population centers and linkages as indicated in Appendix H. Results of protocol surveys will be provided to the DRECP Coordination Group. For areas where Mohave ground squirrels are not detected during protocol surveys and absence is inferred, the survey result will be reviewed and verified by the DRECP Coordination Group prior to initiating Covered Activities.
- **AM-DFA-ICS-38:** Covered Activities sited in a Mohave ground squirrel linkage (see Appendix H) are required to analyze the potential effects on connectivity through the linkage to determine whether the function of the linkage will be maintained after construction and during project operations. Connectivity will be assessed by considering pre- and post-project ability of the area to support resident Mohave ground squirrels and provide for dispersal of their offspring to population centers outside the linkage, and dispersal through the linkage between population centers.
- Covered Activities that occur in Mohave ground squirrel linkages shown in Appendix H must be configured and located in a manner that does not diminish Mohave ground squirrel population and habitat connectivity through the linkage.
- **AM-DFA-ICS-39:** Disturbance of suitable habitat within the Mohave ground squirrel important areas will not occur during the typical dormant season (August 1 through February 28) unless absence is inferred and is supported by protocol surveys and other available data during the previous active season.
- **AM-DFA-ICS-40:** Within the Mohave ground squirrel range configure solar panel and wind turbine arrays to allow areas of native vegetation that will potentially facilitate Mohave ground squirrel movement through the site. This may include raised and/or rotating solar panels or open space between rows of panels or turbines. Fences surrounding sites should be permeable for Mohave ground squirrels.

Operations

- **AM-DFA-ICS-41:** For any ground-disturbing (e.g., vegetation removal, earthwork, trenching) activities, occurrences of Mohave ground squirrel will be flagged and avoided, with a minimum avoidance area of 50 feet, until the squirrels have moved out of harm's way. A Designated Biologist (see Glossary of Terms) may also actively move squirrels out of harm's way.
- **AM-DFA-ICS-42:** Rodenticides will not be used to manage rodents on project sites within the range of the Mohave ground squirrel. Use of rodenticide inside of buildings is allowed.

II.3.1.2.5.5 Natural Communities and Covered Species Avoidance and Minimization CMAs in the Reserve



The reserve design developed for each alternative from the reserve design process described in Section I.3.4.4 (i.e., the DRECP Plan-Wide Reserve Design Envelope for each alternative) includes the resource protections and management within the BLM LUPA conservation designations (i.e., NLCS, ACECs, and Wildlife Allocations) and the Conservation Planning Areas where conservation land acquisitions and management as well as conservation actions would occur through plan implementation to contribute to achieving the BGOs.

There are two sets of biological CMAs that apply in the reserve: the biological CMAs for BLM LUPA conservation designations and the biological CMAs for non-BLM LUPA lands added to the reserve through implementation.

- **BLM LUPA conservation designations** – The biological CMAs are partnered with the BLM Management Plans for special land allocations and are referenced in this section. This section also describes any additional biological CMAs that would apply to BLM LUPA conservation designations.
- **Lands added to the reserve** – These biological CMAs apply to allowable Covered Activities in the lands added to the reserve (i.e., transmission projects and conservation activities).

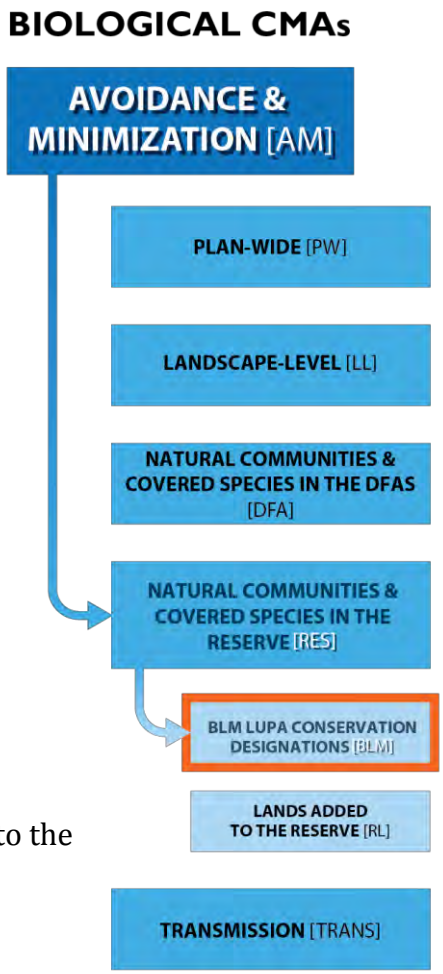
For both the BLM LUPA conservation designations and the lands added to the reserve, the applicable CMAs for DFAs would be implemented in addition to the applicable biological CMAs provided in this section.

In addition to the resource protections and management in these areas, other mechanisms that contribute to the natural community and Covered Species Plan-wide BGOs include:

- **Implementation of the Plan-Wide CMAs –** Many of the Plan-wide CMAs (Section II.3.1.2.5.2) address avoidance and minimization designed to protect and maintain natural communities and Covered Species (e.g., resource setback standards, standard practices for hydrology and water resources, standard practices for soil resources, and standard practices for weed management).
- **Implementation of Landscape-level Biological CMAs –** Landscape-level CMAs (Section II.3.1.2.5.3) have been identified to provide additional avoidance and minimization for specific landscape scale processes, that are also designed to protect and maintain certain natural communities and Covered Species.

The following provides the natural community and Covered Species biological CMAs within the reserve.

BLM LUPA Conservation Designations



In addition to the Plan-wide CMAs, landscape-level CMAs, and the Natural Communities and Covered Species CMAs in the DFAs, the following CMAs would be implemented within BLM conservation designations for the identified natural communities and Covered Species.

Common to BLM LUPA Conservation Designations

AM-RES-BLM-1: The following CMA will be implemented on BLM LUPA conservation designations for all natural communities and Covered Species:

- The values, goals, objectives, and management actions established in the BLM special land allocation management plans (i.e., NLCS, ACEC and Wildlife Allocation) apply to land with BLM LUPA conservation designations, as described in Appendix L. Natural communities and Covered Species within BLM LUPA conservation designations will be managed according to the unit-specific management actions to maintain the

vegetation, fish and wildlife, and other resource values within the NLCS/ACEC/Wildlife Allocation unit as described in the BLM special land allocation management plans (Appendix L).

Dune Natural Communities and Covered Species (DUNE)

North American Warm Desert Dune and Sand Flats

- **AM-RES-BLM-DUNE-1:** Non-Covered Activities will be prohibited within Aeolian transport corridors, except as needed to maintain existing development or improve land management capabilities. Any discretionary approvals for maintenance of existing facilities, or renewal of existing ROW, will determine whether those facilities are adversely impacting hydrologic or Aeolian processes, rare natural community alliances, or Covered Species. If existing facilities, or maintenance thereof, adversely affect these values, BLM, as part of any discretionary approval to maintain the project, or for renewal of a ROW grant, will determine if the adverse effects of the existing facility and associated maintenance can be reasonably rectified, avoided/minimized, or mitigated, and if so, require appropriate measures as needed to reduce any potentially significant impacts to the extent legally permissible.
- **AM-RES-BLM-DUNE-2:** Non-Covered Activities, and any newly constructed roads and/or routes, will comply with the following:
    - Setback 0.25 mile from Aeolian corridors and Mojave fringe-toed lizard suitable habitat.
- Be sited and/or configured to maintain the spatial extent, habitat quality, and ecological function of Aeolian transport corridors unless related to maintenance of existing facilities.
    - Roads will not be paved, except as deemed necessary by the DRECP Coordination Group.
    - Newly constructed roads and/or routes may be considered if they benefit minimization measures for natural, cultural and ecological resources of concern.

Plant Covered Species (PLANT)

Common to Plant Covered Species CMAs

- **AM-RES-BLM-PLANT-1:** For all land allocations, substations will be sited in such a way as to avoid suitable habitat for all plant Covered Species.

Individual Covered Species (ICS)

Reptile Covered Species

Desert Tortoise

- **AM-RES-BLM-ICS-1:** Any area that has been or will be identified as a Tortoise Translocation Area, as part of the fulfillment of an ESA Section 7 Biological Opinion, will be identified as a development avoidance area. No development that requires translocation of tortoises, will be authorized within these areas and they will be managed for the conservation of desert tortoise.
- **AM-RES-BLM-ICS-2:** All activities, except transmission projects, that will result in the long-term removal of habitat supporting an adult desert tortoise density (i.e., individuals 160mm or more) of more than 5 per square mile or more than 35 individuals total are prohibited. The number of desert tortoises on-site will be based on estimates derived from the protocol surveys described in **AM-DFA-ICS-3** using the USFWS's pre-project survey protocol.
- **AM-RES-BLM-ICS-3:** All activities, except transmission projects, in desert tortoise TCAs or linkages that will result in long-term removal of habitat supporting more than 5 adult individuals are prohibited. The number of desert tortoises on-site is based on estimates derived from the protocol surveys described in **AM-DFA-ICS-3** using the USFWS's pre-project survey protocol.
- **AM-RES-BLM-ICS-4:** All activities will not exceed the long-term ground disturbance cap (see "BLM disturbance cap" in the Glossary of Terms) shown below in Table II.3-12 for portions of the BLM LUPA conservation designations that are required for desert tortoise conservation.

Table II.3-12
Desert Tortoise Ground Disturbance Caps in the BLM LUPA Conservation Designations

Applicable Areas[1]	Disturbance Cap[2]
Tortoise Conservation Areas	
Desert Tortoise Research Natural Area	0.0%
Fremont-Kramer Area of Critical Environmental Concern and Critical Habitat Unit	0.5%
Superior-Cronese Area of Critical Environmental Concern and Critical Habitat Unit	0.5%
Ord-Rodman Area of Critical Environmental Concern and Critical Habitat Unit	0.5%
Pinto Mountains Area of Critical Environmental Concern and Critical Habitat Unit	0.5%
Chuckwalla Area of Critical Environmental Concern and Critical Habitat Unit	0.5%
Chemehuevi Desert Area of Critical Environmental Concern and Critical Habitat Unit	0.5%

Table II.3-12
Desert Tortoise Ground Disturbance Caps in the BLM LUPA Conservation Designations

Applicable Areas[1]	Disturbance Cap[2]
Piute Valley Area of Critical Environmental Concern and Critical Habitat Unit	0.5%
Joshua Tree National Park	N/A
Shadow Valley Area of Critical Environmental Concern	0.5%
Ivanpah Valley Area of Critical Environmental Concern (Includes Critical Habitat on BLM Land)	0.1%
Mojave National Preserve	N/A
Death Valley National Park	N/A
Desert Tortoise Linkages	
Ord-Rodman to Superior-Cronese to Mojave National Preserve	1%
Superior-Cronese to Mojave National Preserve to Shadow Valley to Death Valley National Park Linkage	1%
Joshua Tree National Park and Pinto Mountains Area of Critical Environmental Concern to Chemehuevi Linkage	1%
Death Valley National Park to Nevada Test Site	1%
Ivanpah Valley Linkage	0.1%
Chemehuevi to Chuckwalla Linkage	0.1%
Pinto Wash Linkage	0.1%
Ord-Rodman to Joshua Tree Linkage	0.5%
Fremont Kramer to Ord-Rodman Linkage	0.5%
High-value Colorado Desert Habitat	1%

1 Tortoise Conservation Areas are shown in Appendix H.
2 All disturbance thresholds identified for a given TCA, desert tortoise linkage, or other portion of the desert tortoise reserve are allocated proportionally to each jurisdiction managing land within that geographic area. For example if 100 acres is the allowable disturbance within a given TCA's boundary and the BLM administers 99% of the land within that TCA, the BLM's allotted disturbance level will be 99 acres and the remaining disturbance will be proportionally divided among the other jurisdictions (i.e., county, city, state, etc.) within that unit.

- **AM-RES-BLM-ICS-5:** A Designated Biologist (see Glossary of Terms) will accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed.
- **AM-RES-BLM-ICS-6:** New roads will undergo a route designation process, and for BLM-administered lands designated through a Travel and Transportation Management Plan within BLM LUPA conservation designations.

Bird Covered Species

Gila Woodpecker

- **AM-RES-BLM-ICS-7:** Covered Activities will avoid the eastern Chuckwalla Mountains wilderness, to protect previously occupied and future restored suitable nesting habitat in the vicinity of Corn Springs, or to the entire expanse of Milpitas Wash, unless administratively necessary or necessary to support existing facilities, as determined by BLM.
- **AM-RES-BLM-ICS-8:** In areas of known disturbance or high likelihood of disturbance to breeding pairs during the breeding season, BLM will analyze establishing seasonal closures and buffers in specific areas to minimize nest abandonment.

Golden Eagle

- **AM-RES-BLM-ICS-9:** The cumulative loss of foraging habitat within a 4 mile radius around active or alternative golden eagle nests (see Appendix H) in the reserve will be limited to less than 10%.

Mammal Covered Species

Desert Bighorn Sheep

On BLM-administered lands, Desert Bighorn Sheep CMAs would be implemented to the extent feasible and allowable under existing permits, leases, and allotment plans.

- **AM-RES-BLM-ICS-10:** Significant new ground disturbance, excluding transmission projects in designated and new utility corridors, will not negatively affect access and use to known or potential water sources used by bighorn sheep.
- **AM-RES-BLM-ICS-11:** BLM designated routes will be appropriately signed to limit use to the roads and trails, if necessary to reduce impacts from the recreational use to lambing and rearing.
- Rock climbing restrictions during the peak lambing and rearing season (March 1 through May 31) on BLM-administered lands will be considered if data indicates likely disturbance to lambing and rearing in occupied sheep core locations.
- **AM-RES-BLM-ICS-12:** For non-BLM Lessee's, domestic livestock will not be allowed to be trailed (transported on foot [herded]) through known or likely to be occupied bighorn sheep habitat, to minimize exposure and disease transmission to bighorn sheep. Vehicular movement of livestock will be allowable. Livestock will not be allowed to exit the vehicle transport, except in emergencies, while on BLM-administered land.

- For BLM Lessee's, consistent with existing (at time of ROD) leases and allotment plans, domestic livestock will be controlled and moved to minimize exposure and disease transmission to bighorn sheep, using techniques including but not limited to fencing with adequate buffers, vehicle transport, and timing. Vehicular movement of livestock will be allowable. Livestock will remain in the vehicle transport, except in emergencies, while on BLM-administered land, unless at the destination.
- For BLM grazing Lessee's, trailing of domestic sheep between discontiguous allotments, may be permittable if done in a manner, including timing, which prevents interaction with bighorn sheep and avoids disease transmission from domestic sheep to bighorn sheep.
- At the time of grazing allotment lease and/or allotment plan renewal, a measure to eliminate trailing within allotments (movement of domestic livestock on foot or herding) through known or likely to be occupied bighorn sheep habitat will be considered and analyzed using the best available science on domestic livestock disease transmission to bighorn sheep.
- **AM-RES-BLM-ICS-13:** To reduce the impact on bighorn sheep from domestic livestock in grazing allotments, BLM proposes:
- Permanently closing specified vacant allotments
- Accepting voluntarily retirement of allotments
- Accepting donation of allotments as one component of mitigation
- Requiring specific terms and conditions in renewed grazing permits, as needed
- Considering converting domestic sheep allotments to cattle allotments.
- Consistent with existing or renewed grazing allotment plans, remove or alter livestock fencing to enhance bighorn sheep movements.

Mohave Ground Squirrel

- **AM-RES-BLM-ICS-14:** Long-term vegetation removal within Important Areas will be prohibited, unless the land use is compatible with Mohave ground squirrel protection and management. Compatible land uses are those described in the BLM LUPA for ACECs where Mohave ground squirrel occur.
- **AM-RES-BLM-ICS-15:** Any disturbance within suitable habitat will require the same protocol survey (**AM-DFA-ICS-37**), clearance survey (**AM-DFA-ICS-36**), and construction monitoring (**AM-DFA-ICS-41**) measures for DFAs.
- **AM-RES-BLM-ICS-16:** BLM will not authorize the use of rodenticides on BLM-administered land in areas where Mohave ground squirrel are protected and managed. Use of rodenticide inside of buildings is allowed.

- **AM-RES-BLM-ICS-17:** On BLM conservation lands, to the maximum extent practicable and/or as allowed under existing permits establish and maintain fencing to exclude cattle, horses, sheep, and other potential grazers from areas that are protected and managed for Mohave ground squirrel and from vegetation stands that are important foraging habitat, including winterfat and spiny hopsage.

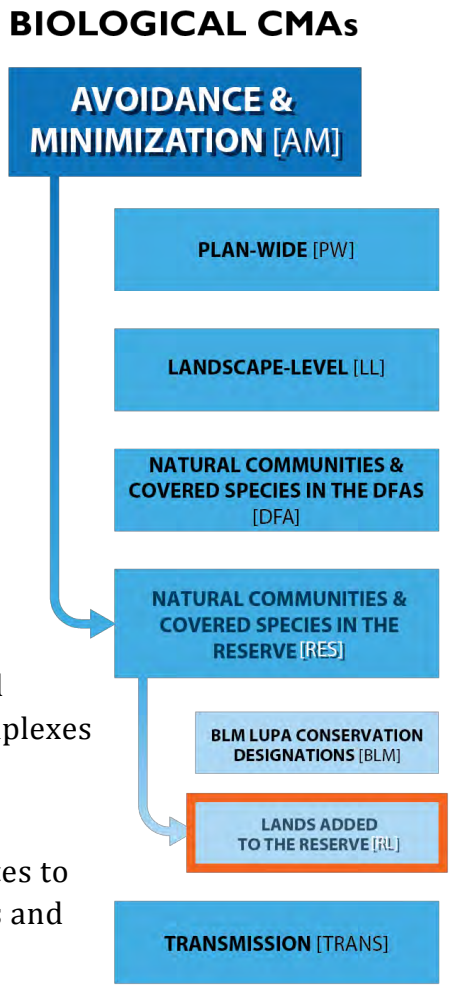
Bendire's Thrasher

Operations

- **AM-RES-BLM-ICS-18:** If Bendire's thrasher is present, conduct biological monitoring (see Glossary of Terms) to ensure that Bendire's Thrasher individuals are not directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings).

Lands Added to the Reserve

In addition to the Plan-wide CMAs, landscape-level CMAs, and the Natural Communities and Covered Species CMAs in the DFAs, the following CMAs would be implemented within lands added to the reserve for the identified natural communities and Covered Species.



Dune Natural Communities and Covered Species (DUNE)

North American Warm Desert Dune and Sand Flats

- **AM-RES-RL-DUNE-1:** To the maximum extent practicable (see "unavoidable impacts to resources" in the Glossary of Terms), remove existing barriers and prohibit new barriers or obstructions in sand source areas and Aeolian transport corridors where needed to maintain or restore ecologically functional geomorphic processes and the extant sand dune complexes in the Plan Area.
- **AM-RES-RL-DUNE-2:** Monitor and enforce vehicular restrictions and travel off designated routes to prevent degradation of psammophytic communities and rare natural community alliances, and mortality to Covered Species.

Mojave Fringe-Toed Lizard

- **AM-RES-RL-DUNE-3:** Covered Activities will be sited and designed to avoid impacts to sand transport within Aeolian corridors.
- Non-Covered Activities will be sited to avoid reductions in sand supply to the Aeolian corridor.

Bat Covered Species (BAT)

Pallid Bat

- **AM-RES-RL-BAT-1:** Impacts to desert scrub natural communities within 3 miles of occupied or presumed occupied roosts (as described in **AM-DFA-BAT-1**) will not exceed 5% (see "DRECP disturbance cap" in the Glossary of Terms).

Townsend's Big-Eared Bat

- **AM-RES-RL-BAT-2:** Impacts to forest, woodland, edge habitats, and microphyll woodland natural communities within 3 miles of occupied or presumed occupied roosts (as described in **AM-DFA-BAT-1**) will not exceed 5% (see "DRECP disturbance cap" in the Glossary of Terms).

Plant Covered Species (PLANT)

Common to Plant Covered Species CMAs

- **AM-RES-RL-PLANT-1:** Impacts to suitable habitat for all plant Covered Species within lands added to the reserve will be limited to 1% of their suitable habitat in the Plan Area (see "DRECP disturbance cap" in the Glossary of Terms).
- **AM-RES-RL-PLANT-2:** Occurrences of plant Covered Species, including designated transmission corridors, will be avoided within the lands added to the reserve to the maximum extent practicable (see "unavoidable impacts to resources" in the Glossary of Terms).
- All Covered Activities will require an avoidance setback of 0.25 mile from plant Covered Species occurrences. Setbacks will be placed strategically to protect ecological processes.
- **AM-RES-RL-PLANT-3:** Substations will be sited in such a way as to avoid all suitable habitat.

Individual Covered Species (ICS)

Reptile Covered Species

Desert Tortoise

- **AM-RES-RL-ICS-1:** Any area that has been or will be identified as a Tortoise Translocation Area, as part of the DRECP reserve, project requirement, fulfillment of an ESA Section 7 Biological Opinion or Section 10 permit, will be identified as a development avoidance area. No development that requires translocation of tortoises, will be authorized within these areas and they will be managed for the conservation of desert tortoise.
- **AM-RES-RL-ICS-2:** Covered Activities, except transmission projects, that will result in the long-term removal of habitat supporting an adult desert tortoise density (i.e., individuals 160mm or more) of more than 5 per square mile or more than 35 individuals total are prohibited. The number of desert tortoises on-site will be based on estimates derived from the protocol surveys described in **AM-DFA-ICS-3** using the USFWS's pre-project survey protocol.
- **AM-RES-RL-ICS-3:** Covered Activities, except transmission projects, in Desert Tortoise TCAs or linkages that will result in long-term removal of habitat supporting more than 5 adult individuals are prohibited. The number of desert tortoises on-site is based on estimates derived from the protocol surveys described in **AM-DFA-ICS-3** using the USFWS's pre-project survey protocol.
- **AM-RES-RL-ICS-4:** A Designated Biologist (see Glossary of Terms) will accompany any geotechnical testing equipment to ensure no tortoises are killed and no burrows are crushed. **AM-RES--ICS-5:** To the maximum extent practicable (see "unavoidable impacts to resources" in the Glossary of Terms), transmission projects (including substations) will be sited on existing disturbed areas within the transmission corridors.
- **AM-RES-RL-ICS-6:** Existing roads and open routes will be used to establish firebreaks in the conserved lands, where warranted, outside of fire season. **AM-RES-RL-ICS-7:** Guzzlers located within portions of the lands added to the reserve that are required for desert tortoise conservation will have escape ramps.

Flat-Tailed Horned Lizard

- **AM-RES-RL-ICS-8:** Covered Activities will not be located in Flat-tailed horned lizard Management Areas.
- Disturbance from Covered Activities will be limited to 10 acres or less per authorization.

- **AM-RES-RL-ICS-9:** No Covered Activities that will result in surface occupancy are allowed within the Ocotillo Wells Research Area.

Bird Covered Species

Bendire's Thrasher

Operations

- **AM-RES-RL-ICS-10:** If Bendire's thrasher is present, conduct biological monitoring (see Glossary of Terms) to ensure that Bendire's Thrasher individuals are not directly affected by operations (i.e., mortality or injury, direct impacts on nest, eggs, or fledglings).

Gila Woodpecker

- **AM-RES-RL-ICS-11:** Covered Activities will be setback 150 feet from the outer edge of any saguaro cactus stand within or bordering the southeastern Palo Verde or Whipple Mountains Wilderness Areas or any other area along the Colorado River.

Golden Eagle

- **AM-RES-RL-ICS-12:** The cumulative loss of foraging habitat within a 4 mile radius around active or alternative golden eagle nests (see Appendix H) in the reserve will be limited to less than 10% (see "DRECP disturbance caps" in the Glossary of Terms).

Mammal Covered Species

Desert Bighorn Sheep

- **AM-RES-RL-ICS-13:** During the bighorn sheep peak lambing and rearing period (December 1 through May 31), a seasonal closure for all recreational permitted activities will be implemented in and near occupied lambing and rearing areas.
- Exceptions to the seasonal closures will be for human safety activities. Prohibit rock climbing during the peak lambing and rearing season (December 1 through May 31) in locations of known disturbance to sheep lambing and rearing or highly likely to cause disturbance to lambing and rearing in occupied desert bighorn sheep habitat.
- Eliminate disturbance from recreation with appropriate signage, education, and seasonal closure of roads within lambing areas.
- **AM-RES-RL-ICS-14:** Covered Activities, including transmission projects in designated and new utility corridors, will not limit access to and use of known or

potential water sources for desert bighorn sheep (including at tinajas, water catchments, washes, ponds, artificial water sources, etc.).

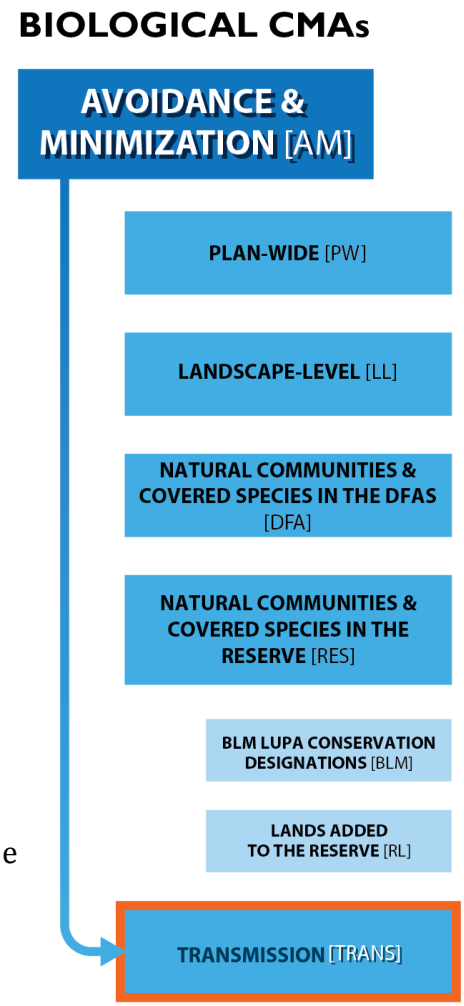
- **AM-RES-RL-ICS-15:** Effectively manage threats related to bighorn sheep contact with feral burros and horses, and domestic cattle, goats and sheep (feral animals) in desert big horn sheep mountain range herd units.

Mohave Ground Squirrel

Same as the CMAs for BLM LUPA conservation designations, except as follows:

- **AM-RES-RL-ICS-16:** The types and level of activities or land uses considered to be compatible with Mohave ground squirrel protection and/or management will be determined through consultation between the land manager and the DRECP Coordination Group.

II.3.1.2.5.6 Transmission Avoidance and Minimization CMAs



As described in Section II.3.1.4, new or modified/expanded transmission projects, including transmission lines, access roads, and substations are included as Covered Activities under the Plan. As such, the biological CMAs described in the previous sections for Covered Activities would generally apply to transmission projects. However, there are some instances where the biological CMAs for Covered Activities require changes to properly apply to the specific attributes of transmission projects. These changes are described below for transmission projects in the DFAs and the reserve.

DFAs and Reserve

Transmission projects in the DFAs and reserve (BLM LUPA conservation designations and lands added to the reserve) would implement the Plan-wide, landscape-level, natural community, and Covered Species CMAs for those areas, respectively, with the following additions:

- **AM-TRANS-1:** Bury electrical collector lines along roads or other previously disturbed paths to minimize new surface disturbance, restrict perching opportunities for the Common Raven, and reduce collision risks, where feasible.

- **AM-TRANS-2:** Flight diverters will be installed on all transmission projects spanning or within 1,000 feet of stream and wash channels, canals, ponds, and any other natural or artificial body of water. The type of flight diverter selected will be subject to approval by the DRECP Coordination Group, and will be based on the best available scientific and commercial data regarding the prevention of bird collisions with transmission projects and guy wires.
- **AM-TRANS-3:** Avoid siting transmission projects that span canyons or are located on ridgelines. Site and design sufficient distance between transmission lines to prevent electrocution of condors.
- **AM-TRANS-4:** Restrict transmission projects to be within designated utility corridors and to be sited and designed to avoid, where possible, and otherwise minimize and offset impacts to sand transport processes in Aeolian corridors, rare natural community alliances, and Covered Species. Transmission substations will be sited to avoid Aeolian corridors, rare natural community alliances, and sand-dependent Covered Species habitats.

II.3.1.2.5.7 Compensation CMAs

In addition to the avoidance and minimization CMAs (Section II.3.1.2.5.1 through Section II.3.1.2.5.6) a key component of the biological CMAs are the compensation CMAs. Appendix H, Approach to Compensation, details the specific requirements, rationale, and estimated amount of compensation generated from impacts of Covered Activities that are summarized in this section. As part of the DRECP biological conservation strategy, the compensation generated from the impacts of Covered Activities is part of the DRECP's proportional contribution to Plan-wide conservation and towards achieving the BGOs.

As shown in Exhibit II.3-5, there are specific compensation requirements for impacts of Covered Activities during siting, construction, and decommissioning as well as for operational bird and bat Covered Species impacts. The compensation requirements for impacts from Covered Activities during siting, construction, and decommissioning (excluding operational impacts on bird and bat Covered Species) are expressed as compensation ratios that are used to calculate the required acquisition of a calculated compensation acreage, a corresponding compensation fee, eligible non-acquisition compensation actions, or a combination of these measures to fulfill the compensation requirements. Compensation for bird and bat Covered Species operational impacts would be fee based and calculated depending on the annual operational effects on birds and bat.

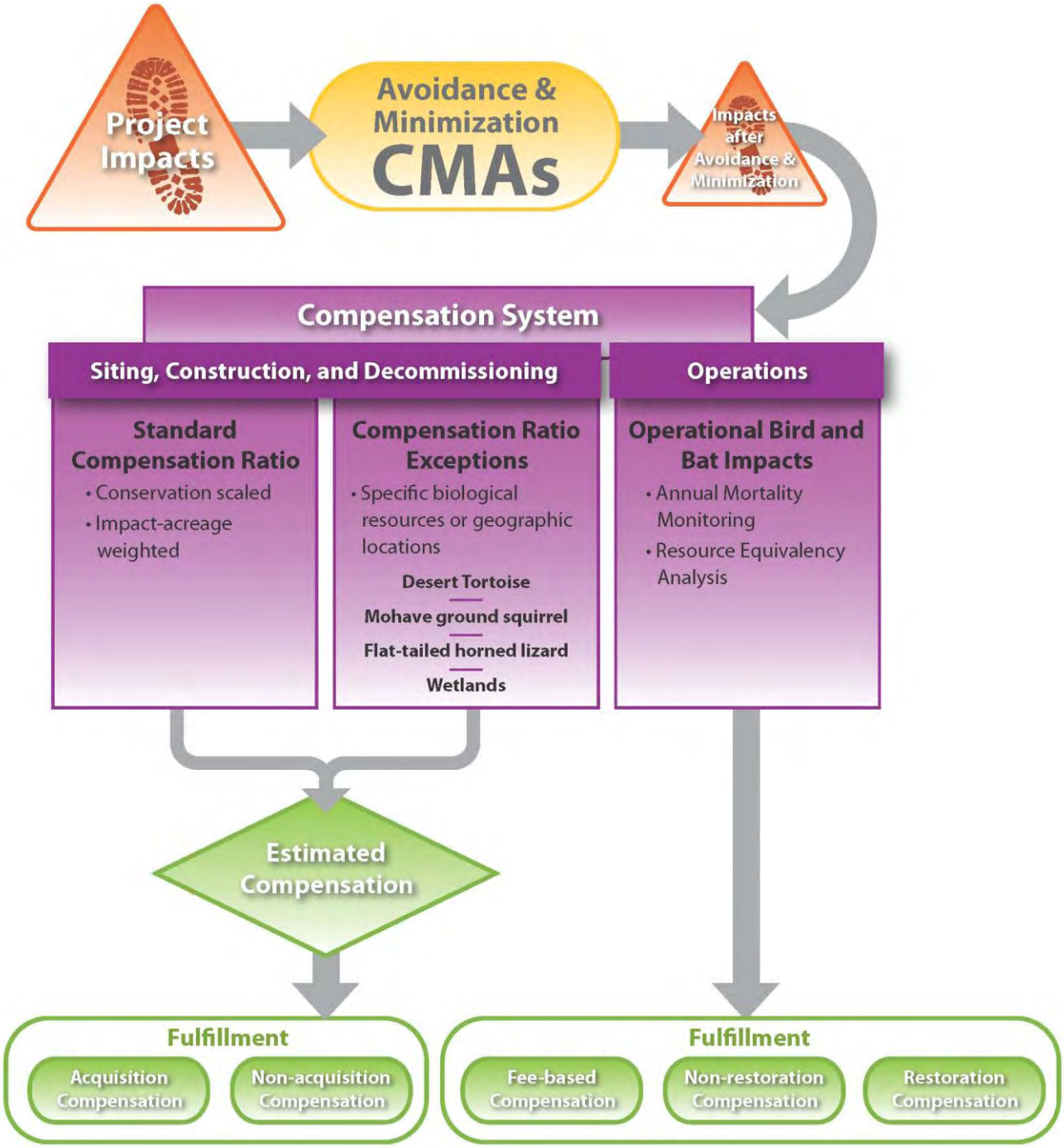


Exhibit II.3-5 Tiered Compensation System

Compensation Requirements for Siting, Construction, Terrestrial Operational, and Decommissioning Impacts

DRECP compensation requirements are expressed as compensation ratios, which are used to calculate how much compensation acreage would be required to offset the siting, construction, terrestrial operational, and decommissioning impacts. The approach for determining the estimated compensation requirements for impacts of Covered Activities involves quantifying the amount of impacts that would result from a project after implementation of avoidance and minimization CMAs (as described in Section II.3.1.2.5.1 through Section II.3.1.2.5.6) and applying the appropriate compensation ratios to the impacted areas. The resulting compensation acreage could then be fulfilled through acquisition of the determined compensation acreage, a corresponding compensation fee, eligible non-acquisition compensation actions, or a combination of these measures. Compensation criteria including the types of allowable compensation (e.g., acquisition or non-acquisition), the "kind" of compensation required (resource-specific compensation specifications), and any geographic requirements would be determined on a project-specific basis as described by the DRECP Conservation Area Assembly in Section II.3.1.5.5.

For impacts from Covered Activities (excluding operational impacts on bird and bat Covered Species), the compensation acreage requirement would be calculated by applying the "standard" compensation ratio, except for impacts to certain biological resources or in specific geographic locations where the compensation ratio "exceptions" would apply. The portion of the impacts from the Covered Activities within the exception area would be subject to the compensation ratio exceptions, and the portion of the impacts from the Covered Activities outside the exception area would be compensated at the standard compensation ratio. Transmission Covered Activities may have different compensation ratios depending on the location of the impacts from transmission Covered Activities, in the DFAs or in the reserve.

The standard compensation ratio was determined through the methodology described in Appendix H and was scaled based on how well biological resources was conserved in the Plan-wide reserve design ("conservation-scaled"), how much impact is expected to occur to that resource within each DFA ecoregion subarea ("impact acreage-weighted"), and was also informed by the development of the compensation ratio exceptions. As described in Appendix H, the compensation ratio exceptions would apply to the portion of Covered Activities that would impact specific resources or in specific geographic locations. In cases where more than one compensation ratio exception would apply, the highest compensation ratio would apply to the overlapping impact acreage. Both the standard compensation ratio and the compensation ratio exceptions are "acquisition-calibrated," meaning that they represent the ratio of acres that would need to be conserved for each acre of impact. These

acquisition-calibrated ratios would be the basis for converting acquisition compensation into corresponding non-acquisition compensation or a corresponding compensation fee.

The compensation requirements for impacts from Covered Activities during siting, construction, terrestrial operations, and decommissioning will be met by acquisition of the calculated compensation acreage, a corresponding compensation fee paid by to the DRECP Coordination Group, non-acquisition compensation actions, or a combination of these measures. Compensation criteria for land acquisitions and non-acquisition actions will be determined through implementation on a project-specific basis as described by the DRECP Conservation Area Assembly in Section II.3.1.5.5. The conversion from the acquisition-based compensation requirements to the equivalent fee based compensation will be determined on a project-by-project basis by the DRECP Coordination Group and will be based on the compensation acreage as calculated using the compensation ratios. Similarly, non-acquisition compensation actions equivalency to the acquisition-based compensation requirements will be determined on a project-by-project basis, will be based on the compensation acreage calculated by the compensation ratios, and will be approved by the DRECP Coordination Group. For each species, eligible non-acquisition actions and the proportion of the compensation type (shown as a percent for acquisition and non-acquisition) for the entire permit term are specified in Appendix H.

The following CMAs would be required for Covered Activities to determine the compensation acreage requirements for siting, construction, terrestrial operational, and decommissioning impacts:

- **COMP-1:** Impacts from Covered Activities in the DFAs will be compensated using the standard compensation ratio, except for the biological resources and specific geographic locations listed as compensation ratio exceptions that will use the compensation ratio exceptions summarized in Table II.3-13 below and described in further detail in Appendix H. The compensation acreage requirement calculated by the standard compensation ratio and the compensation ratio exceptions can be fulfilled through land acquisition compensation approved by the DRECP Coordination Group, through implementation of non-acquisition actions approved by the DRECP Coordination Group, or a combination of these options. Compensation criteria for land acquisitions and non-acquisition actions will be determined through implementation on a project-specific basis as described by the DRECP Conservation Area Assembly in Section II.3.1.5.5.

Table II.3-13
Compensation Ratios for the Impacts[1] of DRECP Covered Activities in the DFAs

Standard Compensation Ratio[1]	Compensation Ratio Exceptions[1]	
1:1	Desert tortoise[1]: Intact linkage habitat surrounding the Ord-Rodman critical habitat unit	2:1
	Mohave ground squirrel[1]: Key population centers	2:1
	Flat-tailed horned lizard[1]: FTHL Management Areas	RMS
	Wetlands[1]	1:1 (preserve) 1:1 (restore or enhance)

[1] See Appendix H, Table H-4a, for full footnotes.
RMS = Flat-Tailed Horned Lizard Rangewide Management Strategy

- **COMP-2:** Impacts from transmission Covered Activities in the DRECP Plan-Wide Reserve Design Envelope will be compensated using the standard compensation ratio, except for the biological resources and specific geographic locations listed as compensation ratio exceptions that will use the compensation ratio exceptions summarized in Table II.3-14 and described in further detail in Appendix H. The compensation acreage requirement calculated by the standard compensation ratio and the compensation ratio exceptions can be fulfilled through land acquisition compensation approved by the DRECP Coordination Group, through implementation of non-acquisition actions approved by the DRECP Coordination Group, or a combination of these options. Compensation criteria for land acquisitions and non-acquisition actions will be determined through implementation on a project-specific basis as described by the DRECP Conservation Area Assembly in Section II.3.1.5.5. Compensation for the impacts of transmission Covered Activities within desert tortoise critical habitat will be used for management of critical habitat in the same recovery unit as the impact.

Table II.3-14
Compensation Ratios for the Impacts of Transmission Covered Activities in the DRECP Plan-Wide Reserve Design Envelope

Standard Compensation Ratio[1]	Compensation Ratio Exceptions[1]	
1:1	Desert tortoise designated critical habitat	5:1
	Mohave ground squirrel[1]: Key population centers	2:1
	Flat-tailed horned lizard[1]: FTHL Management Areas	RMS
	Wetlands[1]	1:1 (preserve) 1:1 (restore or enhance)

[1] See Appendix H, Table H-4b, for full footnotes.
RMS = Flat-Tailed Horned Lizard Rangewide Management Strategy

Compensation Requirements for Operational Impacts to Covered Birds and Bats

The compensation for the impacts to bird and bat Covered Species from operational Covered Activities would be determined based on annual monitoring of bird and bat mortality and a fee assessed every 5 years to fund compensatory mitigation. Initial compensation fee for operational bird and bat impacts would be based on pre-project monitoring of bird use and estimated Covered bird and bat species take of the project. As described in Appendix H, the approach to calculating the operational bird and bat compensation is based on the total replacement cost for a given resource. This involves measuring the relative loss to a population (debt) resulting from an operational activity and the productivity gain (credit) to a population from the implementation of compensatory mitigation actions. The measurement of these debts and gains (using the same "bird years" metric as described in Appendix H) is used to estimate the necessary compensation fee.

The following CMA would be required for all Covered Activities to determine the compensation acreage requirements for impacts to bird and bat Covered Species during operations:

- **COMP-3:** The compensation for impacts to bird and bat Covered Species from operational Covered Activities will be based on the monitored impacts to bird and bat Covered Species during operations. Each project will include a monitoring program to provide project-specific information on annual operational effects on bird and bat Covered Species. The bird and bat mortality for each project will dictate the amount and type of compensation required to offset the effects of the project. Compensation will be based on a Resource Equivalency Analysis approach, described in Appendix H, which will estimate the replacement cost of services lost to bird and bat populations. Compensation will be satisfied by protecting, restoring, or otherwise improving habitat such that the carrying capacity or productivity is increased to offset the impacts resulting from the operational Covered Activities. Compensation may also be satisfied by non-restoration actions that reduce mortality risks to birds and bats (e.g., increased predator control and protection of roosting sites from human disturbance). Compensation may be in kind (i.e., through restoration activities lead by the proponent, with approval from the DRECP Coordination Group) or as a fee paid to restoration activities previously identified by the DRECP Coordination Group. The type and size of compensation actions necessary to offset losses are discussed in Appendix H.

Compensation Requirements for Impacts to Golden Eagle

- **COMP-4:** Project proponents of Covered Activities will provide specific golden eagle compensatory mitigation in accordance with USFWS Eagle Conservation Plan Guidance and Appendix H.
- **COMP-5**: The project proponents of Covered Activities will be required to contribute to a DRECP-wide golden eagle monitoring program.

II.3.1.3 Monitoring and Adaptive Management Program

The MAMP is an essential part of the DRECP conservation strategy. This section describes the framework designed to guide implementation of the MAMP, and includes the following sections:

- Section II.3.1.3.1: Purpose
- Section II.3.1.3.2: State and Federal Guidelines and Policies Related to Monitoring and Adaptive Management
- Section II.3.1.3.3: DRECP Adaptive Management Team
- Section II.3.1.3.4: Monitoring
- Section II.3.1.3.5: Adaptive Management Framework
- Section II.3.1.3.6: Information Management
- Section II.3.1.3.7: Nonbiological Resources MAMP

II.3.1.3.1 Purpose

The purpose of the DRECP MAMP is to provide the overarching programmatic framework for long-term monitoring of the progress of implementation of conservation actions, and monitoring overall implementation of plan objectives. The REAT agencies would use the MAMP as a key part of ensuring: (1) overall progress and compliance with the provisions of the DRECP, including the BLM LUPA, the NCCP and the GCP, prepared pursuant to Endangered Species Action Section 10(a)(1)(B) and the NCCPA; and (2) the most effective use of DRECP program funds. The MAMP encompasses monitoring for compliance with permit conditions (i.e., compliance monitoring), monitoring to determine progress towards achievement of BGOs (i.e., effectiveness monitoring), project-level monitoring, land use plan monitoring, and monitoring for validation of management actions. The approval agencies and the project proponent would be responsible for monitoring and reporting on actions implemented on project sites. The DRECP Coordination Group would be responsible for ensuring monitoring and reporting under the MAMP for compliance in the reserve. The REAT agencies, through implementation of the MAMP, would apply

monitoring results and other sources of information to management, including adaptive management, for DRECP actions.

Adaptive management, as a key part of the MAMP, is an iterative process designed to continually improve the understanding of managed systems and inform their management over time. A successful MAMP would allow the DRECP to meet its monitoring and management obligations in accordance with state and federal requirements. Further, the desert region has been, and is expected to continue to be, highly affected by climate change in the coming decades. Therefore, this MAMP would be integral to addressing the biotic and abiotic effects of climate change that are anticipated to occur during the term of the DRECP and beyond, and provide the framework for changing implementation approaches where needed.

The MAMP includes requirements for monitoring and management of biological resources on DRECP reserve lands, and monitoring and management of biological and nonbiological resources on BLM-administered lands. Recognizing that renewable energy production technology will change over time, the MAMP also includes a process for reviewing changes in technology and changes in impacts associated with Covered Activities, and an adaptive management process that addresses changes in technologies and associated impacts.

Table II.3-15 summarizes the role of the MAMP in relation to other parts of the Plan. Collectively, these components are the DRECP conservation strategy.

Table II.3-15
Relationship of MAMP to Other Parts of the DRECP

DRECP Component	Volume, Section	Relationship of MAMP
Biological Goals and Objectives	Volume I, Section I.3.4.3, Identify Biological Goals and Objectives[1]	MAMP provides the framework for long-term monitoring of the overall achievement of BGOs (i.e., effectiveness monitoring)
Conservation and Management Actions	Volume II, Section II.3.1.2.5, Biological Conservation and Management Actions; II.3.2.3, BLM-Specific Conservation and Management Actions; Appendix L, BLM Worksheets	MAMP provides the framework for long-term monitoring of the progress of implementation of DRECP CMAs and other biological conservation actions (i.e., compliance monitoring, project-level monitoring, management action validation monitoring)
Plan implementation and governance	Volume II, Section II.3.1.5, Plan Implementation	Plan implementation describes the implementation structure, governance, cost, and funding related to the MAMP

Notes:
[1] For full text of the BGOs, see Appendix C.

The MAMP was developed according to the state and federal guidelines and policies related to monitoring and adaptive management, as described in Section II.3.1.3.2. Key reference documents for development of the MAMP included *Adaptive Management, The U.S. Department of the Interior Technical Guide* (Williams et al. 2009) and *Adaptive Management, The U.S. Department of the Interior Applications Guide* (Williams and Brown 2012), and *Designing Monitoring Programs in an Adaptive Management Context for Regional Multiple Species Conservation Plans* (Atkinson et al. 2004). Additionally, the *Recommendations of the DRECP Independent Science Advisors* (2010), the *Recommendations of the DRECP Independent Science Panel* (2012), and other relevant publications and guidance on monitoring and adaptive management were used in the development of the MAMP, as cited herein.

II.3.1.3.2 State and Federal Guidelines and Policies Related to Monitoring and Adaptive Management

This section summarizes the state and federal regulations and policies that address the role of monitoring and adaptive management in the DRECP. The DRECP MAMP provides the framework for monitoring and adaptive management for the BLM LUPA, for the CDFW NCCP, and for the USFWS GCP and Eagle Act programmatic take permits.

II.3.1.3.2.1 BLM Land Use Plan Amendment

The regulations in 43 Code of Federal Regulations (CFR) 1610.4-9 require that land use plans establish intervals and standards for monitoring and evaluation based on the sensitivity of the resource decisions, with additional specificity in the BLM Land Use Planning Handbook (H-1601-1), Chapter V (BLM 2005). Land use plan monitoring includes both implementation monitoring (also called compliance monitoring in this section) and effectiveness monitoring. In addition to monitoring, the BLM must periodically evaluate the land use plan and periodic plan monitoring reports to determine whether the land use plan decisions and NEPA analysis are still valid and whether the land use plan is being implemented. NEPA requires mitigation monitoring in 40 CFR 1505.2(c), with additional specificity provided in the BLM NEPA Handbook (H-1790-1), Chapter 10 (BLM 2008a).

Implementation monitoring is the process of tracking and documenting the implementation, or the progress toward implementation, of land use plan decisions. Effectiveness monitoring is the process of collecting data and information as the plan is being implemented in order to determine whether or not desired outcomes are being met or whether progress is being made toward meeting them.

Project-Level Monitoring

BLM requires that holders of ROW grants fund monitoring associated with those grants (43 CFR 2805.16-17). For large-scale development, this is done through preparation and funding of an Environmental and Construction Compliance Monitoring Plan (ECCMP) to ensure compliance with BLM terms, conditions, and stipulations in the ROW grants, the Plan of Development, and required mitigation as provided for in the ROD.

The purpose of the ECCMP is to provide an on-the-ground approach to compliance during project development designed to facilitate successful implementation. This includes the following requirements:

- Required mitigation approved in the RODs, designed to minimize undue and unnecessary degradation to public lands, and offset impacts to the human, environmental, and cultural environment
- Implementation plans based on mitigation requirements
- Terms, conditions, and stipulations in the ROW grant
- Conditions in Notices to Proceed
- Approved methods and construction plans contained in the Plan of Development, which mirror the action approved in the ROD

BLM Assessment, Inventory, and Monitoring Strategy

The BLM Assessment, Inventory, and Monitoring (AIM) Strategy was initiated, in part, to evaluate current monitoring activities and recommend procedures to improve the efficiency and effectiveness of these activities. The AIM Strategy provides guidance on collecting monitoring data that are essential for, and effective in, informing defendable land management (Toevs et al. 2011).

To effectively manage renewable resources, the BLM needs information at multiple scales about resource extent, condition and trend, stressors, and the location and nature of authorized uses, disturbances, and projects. Acquiring and assessing this information would be accomplished through integrating several fundamental processes (i.e., the integrated approach), including: (1) development and application of a consistent set of ecosystem indicators and methods for measuring them (i.e., core quantitative indicators and consistent methods for monitoring); (2) development and implementation of a statistically valid sampling framework; (3) application and integration of remote sensing technologies; and (4) implementation of related data acquisition and management plans (Toevs et al. 2011).

The BLM is using the AIM Strategy as the basis for developing the Riverside East Solar Energy Zone (SEZ) Long-Term Monitoring and Adaptive Management Pilot Project (Toevs et al. 2011; BLM 2014). The pilot project will serve as a comprehensive, but cost-effective, monitoring strategy to better understand the long-term, landscape-level impacts of solar energy development on BLM lands, and will inform development of similar monitoring strategies in other SEZs and in the DFAs. The following elements of a framework monitoring and adaptive management plan were developed for the pilot project using the AIM strategy:

- Frame the issue
- Understand the system
- Develop objectives
- Assemble background and existing information
- Develop monitoring and sampling schema
- Create/finalize monitoring plan
- Implement data collection and management
- Analysis and reporting
- Adaptive management loop

These concepts were integrated with CDFW and USFWS guidance for monitoring and adaptive management (see Sections III.3.1.3.2.2 and III.3.1.3.2.3) in developing the DRECP MAMP.

Department of the Interior Adaptive Management Implementation Policy

DOI Departmental Manual 522 DM 1, Adaptive Management, provides policy guidance for DOI bureaus and offices to incorporate adaptive management strategies into their land and resource management decisions (DOI 2008). The DOI's policy is to encourage the use of adaptive management, as appropriate, as a tool in managing lands and resources.

II.3.1.3.2.2 CDFW Natural Community Conservation Plan

The Natural Community Conservation and Planning Act (NCCPA) (California Fish and Game Code, Section 2800 et seq.) requires that for the CDFW to approve an NCCP it must fully integrate an adaptive management strategy that provides for periodic evaluation and modification. Sections 2820 (7) and (8) require that an NCCP must include a monitoring program and an adaptive management program, and must include terms and conditions requiring the implementation of these programs.

The NCCPA (California Fish and Game Code, Section 2805) defines a monitoring program as "a program within an approved NCCP that provides periodic evaluations of monitoring results to assess the adequacy of the mitigation and conservation strategies or activities and to provide information to direct the adaptive management program."

The NCCPA also describes a monitoring program as including surveys to determine status of biological resources, periodic take assessments, progress reporting, and a monitoring schedule.

In *Designing Monitoring Programs in an Adaptive Management Context for Regional Multiple Species Conservation Plans* developed by the U.S. Geological Survey (USGS) in partnership with CDFW and USFWS, Atkinson et al. (2004) provide guidelines for the stepwise development of a monitoring program. The approach includes the following nine steps:

1. Identify the biological goals and objectives relevant to the monitoring program
2. Identify the scope of the program in terms of geography, land ownership, information users, spatial scale, time scale, and available resources
3. Compile information
4. Group resources and set priorities
5. Develop conceptual models
6. Identify recommended monitoring and uncertainties
7. Develop monitoring implementation approach
8. Develop approach to quality assurance, data management and analysis, and reporting
9. Ensure effective feedback into decision making for adaptive management

The concepts of this stepwise approach were integrated with BLM and USFWS guidance for monitoring and adaptive management (see Sections III.3.1.3.2.1 and III.3.1.3.2.3) in developing the DRECP MAMP.

II.3.1.3.2.3 USFWS General Conservation Plan

Adaptive Management

The interagency DRECP, of which the USFWS's proposed GCP is an integral part, is a prime example of the USFWS's Strategic Habitat Conservation (SHC) initiative (USFWS 2008; USGS 2006). The DRECP would demonstrate SHC "on the ground" as a science-driven, collaborative approach to landscape-level conservation. The DRECP employs SHC principles for shared conservation targets, biological goals and objectives, and a monitoring and adaptive management program to identify the information, decisions, delivery, and

monitoring needed to achieve desired biological outcomes. The basic components of SHC as it relates to the DRECP are (1) biological planning to select appropriate surrogate species to represent a broader array of biological outcomes, including species such as desert tortoise and unlisted species such as desert bighorn sheep, Mohave ground squirrel, and golden eagle; (2) conservation design that combines geospatial data with biological information to create maps and models evaluating potential conservation areas and low-biological conflict DFAs, and to support collaborative decisions about where reserve acquisitions and management actions are needed; (3) conservation delivery using the products of conservation design to adjust and target assembly and management of the DRECP reserve system; and (4) outcome-based monitoring and assumption-driven research to improve conservation management over time through the MAMP. The USFWS is committed to SHC as the most effective process for ensuring protection and conservation of natural resources while facilitating renewable energy development, and adaptive conservation strategies are a major emphasis of SHC.

Adaptive management is one of the five concepts of the USFWS "Five-Point Policy" (65 FR 35242). The Five-Point Policy supplements the Handbook for Habitat Conservation Planning and Incidental Take Permitting Process (HCP Handbook; 61 FR 63854) and the "No Surprises" final rule (50 CFR 17.22[b][5] and 17.32[b][5]), and is applied within the context of the existing ESA statute and regulations. The Five-Point Policy is considered agency policy, and the USFWS is fully committed to implementing it in the national Habitat Conservation Plan (HCP) program under Section 10(a)(1)(B) of the ESA. The DOI also has published technical guidance for designing and applying adaptive management in DOI programs (Williams et al. 2009; Williams and Brown 2012).

Adaptive management has traditionally been viewed and designed for large-scale systems as an integrated method for addressing uncertainty (Holling 1978; Walters 1986; Gundersen 1999). The USFWS Five-Point Policy defines adaptive management broadly as a method for examining alternative strategies for meeting measurable biological goals and objectives and then, if necessary, adjusting future conservation actions according to what is learned. Accordingly, the USFWS is considering adaptive management as a strategy to address uncertainty in the conservation of species covered by the proposed GCP.

The Five-Point Policy requires that an approved HCP, or GCP in the case of the DRECP, must outline the agreed-upon future changes to the conservation strategy for species covered by an incidental take permit. An adaptive management strategy is essential for the GCP because of the uncertain nature of potential significant risks to many of the Covered Species when the permit is issued and Covered Activities for renewable energy development are implemented. Uncertainty in the potential risks of the Covered Activities stem from critical information gaps, such as lack of specific information about a species'

ecology or habitat, uncertainty in the effectiveness of habitat or species management techniques, or lack of knowledge on the degree of potential effects of Covered Activities on Covered Species.

According to the Five-Point Policy, an adaptive management strategy should (1) identify sources of uncertainty and the questions that need to be addressed to resolve the uncertainty; (2) develop and implement alternative strategies, including experimental strategies, as appropriate; (3) integrate a monitoring program to obtain the necessary information for determining whether the adaptive management alternatives are making progress toward achieving the biological goals and objectives of the conservation strategy; and (4) incorporate feedback loops that link implementation and monitoring to a decision-making process that results in appropriate changes in management.

The use of adaptive management strategies is compatible with No Surprises assurances. These assurances apply once all appropriate HCP provisions have been mutually crafted and agreed upon, and approved by USFWS and the applicant; or in the case of the DRECP, once GCP provisions have been approved by USFWS and permit terms and conditions proposed under the GCP have been mutually agreed upon by USFWS and the applicant. Adaptive management strategies are part of those provisions, and implementation of the identified adaptive management strategies are part of a properly implemented conservation plan. When a HCP (or GCP) and permit incorporate an adaptive management strategy, those documents should clearly state the known range of possible conservation adjustments that would be implemented due to significant new information, risk, or uncertainty. That range would define the limits of the financial commitments required of permittees, and would enable applicants to assess the potential economic impacts of adaptive management responses before agreeing to the terms and conditions of the GCP. For the GCP, an adaptive management strategy is integral for guiding permittee responses to "changed circumstances," which must be distinguished from "Unforeseen Circumstances" under No Surprises. A process for responding to changed circumstances is described in Section II.3.1.7.3.

As described in the USFWS's Five-Point Policy, two types of adaptive management are appropriate to consider when developing a strategy to address uncertainty: "passive" adaptation is where information obtained is used to determine a single best course of action; "active" adaptation is developing and testing a range of alternative strategies (Walters and Holling 1990). However, one constraint that may inhibit experimental design for active adaptive management is the possible risk to species associated with using an untested experimental design. Where an active, experimental approach may pose too much of a risk to Covered Species, a more passive approach may be the best course of action under the MAMP. The MAMP would develop adaptive management strategies that would facilitate and improve the decision-making process as permittees implement the terms and

conditions of their incidental take permits under the GCP, and as the DRECP Coordination Group oversees the assembly, monitoring, and management of the reserve system.

According to the Five-Point Policy, the proposed GCP outlines the agreed-upon future changes that permittees would be required to implement to adjust management of avoidance, minimization, and mitigation measures at project sites, including responses to Changed Circumstance, and that the DRECP Coordination Group and Adaptive Management Team would implement in the reserve system (including responses to changed circumstances on permittee mitigation lands). Not all species covered in an incidental take permit need an adaptive management strategy. However, an adaptive management strategy is essential for permitted Covered Activities that would otherwise pose a significant risk to the species at the time the permit is issued due to significant data or information gaps. Possible significant data gaps that may require an adaptive management strategy include, but are not limited to, a significant lack of specific information about the ecology of the species or its habitat (such as food preferences, relative importance of predators, territory size), uncertainty in the effectiveness of habitat or species management techniques, or lack of knowledge on the degree of potential effects of the activity on the species covered in the incidental take permit. A practical adaptive management strategy also includes milestones that are reviewed at scheduled intervals during the life of the incidental take permit.

The USFWS Eagle Act permitting regulations and Eagle Conservation Plan Guidance provides the framework for incorporating adaptive management into take permits for eagles where take is anticipated to be ongoing during the term of the permit. Implementation of advanced conservation practices to reduce impacts associated with ongoing take is an important component to ensure conservation of golden eagles.

Monitoring

The Five-Point Policy also provides guidance for monitoring required as a mandatory element of all HCPs, including the GCP (50 CFR 17.22, 17.32, and 222.307). HCP (and GCP) monitoring includes both compliance monitoring and effectiveness monitoring. Compliance monitoring refers to verifying that a permittee is carrying out the terms and conditions of the incidental take permit, and ensuring that incidental take of Covered Species does not exceed the level authorized by the permit. Effectiveness monitoring evaluates the impacts of the permitted activities and determines whether the effectiveness of the conservation plan is consistent with the assumptions and predictions made when the plan components were developed and approved, including the plan's biological goals and objectives. The Five-Point Policy's term "effectiveness monitoring" is the same concept as "validation monitoring" commonly used in the scientific literature. For the GCP, effectiveness monitoring would be directed toward determining whether the permit issued under the

GCP is contributing toward achieving the BGOs. Integrating the GCP monitoring program into the DRECP MAMP therefore is crucial to guide any necessary changes in management for renewable energy development permitted under the GCP.

Monitoring is discussed in detail in Section II.3.1.3.4. Briefly, monitoring under the GCP would reflect the measurable biological goals and objectives. Monitoring would be based on sound science and standard surveys described in the scientific literature or other previously established monitoring protocols (e.g., agency approved survey protocols). As appropriate, community-level or multiple species approaches (such as those contained in Plan-wide, landscape-level, and community-level CMAs) would be used. The following components are essential for compliance and effectiveness monitoring under the GCP: (1) assessing implementation and effectiveness of permit terms and conditions (e.g., financial responsibilities and obligations, management responsibilities); (2) determining the level of incidental take of Covered Species; (3) determining the biological conditions resulting from implementation of the permit's Covered Activities and conservation plan (e.g., change in species status or habitat conditions); and (4) providing the information needed to implement the DRECP's adaptive management strategy. In addition, an effective monitoring program must be flexible enough to allow modifications, if necessary, to obtain the appropriate information, but at the same time must provide comparable information over both space and time so that large–scale spatial patterns and temporal trends (e.g., population changes) can be detected. Comprehensive monitoring programs for regional, multispecies plans like the DRECP also should include projected milestones, timelines, and/or trigger points or thresholds for evaluating and adjusting to change.

The USFWS Eagle Act permitting regulations and Eagle Conservation Plan Guidance include information regarding the need to monitor impacts of projects to golden eagles and provide feedback as to the effectiveness of advanced conservation practices that have been implemented to minimize impacts to golden eagles.

Both the USFWS and permittees under the GCP would be responsible for monitoring implementation of permit terms and conditions. Compliance monitoring would be the primary responsibility of the USFWS, but would require coordination with and input from the permittees. Permittee assistance with compliance monitoring would include monitoring implementation of Covered Activities and reporting results to USFWS. Permittees, with the assistance of USFWS, would be responsible for verifying the effects and effectiveness of conservation actions permitted under the GCP. The USFWS would require periodic reports of all permittees, as provided under the authority of incidental take permit regulations at 50 CFR 13.45 and 222.301.

II.3.1.3.3 DRECP Adaptive Management Team

A strong institutional structure with the authority to implement the MAMP is an essential component of effective adaptive management.

A full description of the DRECP implementation structure is provided in Section II.3.1.5.2. Briefly, the DRECP Coordination Group would oversee implementation the MAMP based on the advice and recommendations of an Adaptive Management Team. The Adaptive Management Team would have primary responsibility for implementing the MAMP, including developing MAMP scientifically based monitoring protocols and standards and for reviewing and analyzing MAMP monitoring data and reports, including effectiveness monitoring (including validation) monitoring (see Section II.3.1.3.4). The Adaptive Management Team would also review and analyze relevant new scientific information regarding Covered Species and covered natural communities, such as new species data, new vegetation mapping, and other new pertinent scientific research (e.g., surveys methods, analytic methods, etc.). Based on monitoring data and reports, and other new scientific information, the Adaptive Management Team would advise the Coordination Group regarding implementation of the MAMP, including, but not limited to, developing and recommending appropriate adaptive management actions. The Adaptive Management Team would also advise the Coordination Group when and for what purpose independent scientific review or study would be most useful for implementing the MAMP.

The Adaptive Management Team may assist with, but would not be responsible for, compliance monitoring or project monitoring (see Section II.3.1.3.4.1 and II.3.1.3.4.3). Such assistance would primarily occur in the context of effectiveness monitoring and ensuring that progress is being made toward achieving the BGOs (e.g., compliance or project monitoring of wetland avoidance measures and effects on Covered Species and/or their habitats). Compliance monitoring and project monitoring would be carried out by each permittee or ROW holder in accordance with the terms and conditions of its permit(s) or ROW grant. The Adaptive Management Team may also assist with land use plan monitoring as it relates to effectiveness monitoring (see Section II.3.1.3.4.4), but BLM would retain primary responsibility for monitoring implementation of its land use plans.

II.3.1.3.3.1 Adaptive Management Team Membership

The Coordination Group's Program Manager would chair the Adaptive Management Team. The Adaptive Management Team members would include representatives from CDFW, USFWS, BLM, CEC, California State Lands Commission (CSLC), USGS, the National Park Service and California Department of Parks and Recreation. When it would supplement the expertise or experience reflected in the Adaptive Management Team, the Coordination Group may also invite representatives of other public agencies and private organizations as

members. All members of the Adaptive Management Team would have expertise in biology or other relevant fields of science.

II.3.1.3.3.2 Adaptive Management Team Operation

The Adaptive Management Team may invite individuals or convene subteams consisting of individuals who are not members of the Team to provide input into specific MAMP implementation issues. These individuals or subteams may be from the technical staffs of Adaptive Management Team members or other entities or institutions, as deemed appropriate by the Team. The Adaptive Management Team would also ensure that the Science Subgroup of the Stakeholder Working Group would be afforded sufficient opportunity to provide input into issues the Team is considering.

The Program Manager may request that the Adaptive Management Team provide scientific review of specific technical issues related to implementation of the MAMP or implementation of the DRECP conservation strategy, regardless of whether such review is specifically required by the MAMP. The Stakeholder Working Group also may recommend to the Program Manager areas they believe need additional scientific review. At least once every 5 years, the Adaptive Management Team would also assess the overall efficacy of the MAMP and advise the Coordination Group regarding whether revisions to the MAMP would improve its effectiveness.

II.3.1.3.3.3 Program Management

Based on the advice and recommendations of the Adaptive Management Team, consideration of available resources, and guidance from the DRECP Executive Policy Group, the DRECP Coordination Group would manage and implement the MAMP. Management and implementation would include, among other tasks:

- Developing DRECP long-range monitoring and management plans for defined ecoregion subunits within the reserve system.
- Developing annual work plans that tier from the long-range monitoring and management plans.
- Defining responsibilities for coordinated monitoring and management actions.
- Reporting on effectiveness monitoring as described in Section II.3.1.3.4.2.
- Making relevant monitoring data and reports and other relevant scientific information available to the public through the DRECP data portal and other means as determined appropriate.

- Disseminating information (i.e., annual reports from permittees) from the permitting agencies regarding the status of the DRECP and its components: BLM LUPA, NCCP, GCP, and permits issued under the GCP.
- Conducting a comprehensive review of the DRECP MAMP at least every 5 years in cooperation with the Stakeholder Working Group.

II.3.1.3.4 Monitoring

The monitoring requirements of the MAMP would include compliance monitoring, effectiveness monitoring (sometimes referred to as "performance monitoring"), project-level monitoring, land use plan monitoring, and validation monitoring.

Compliance monitoring tracks the status of DRECP implementation and refers primarily to administrative duties related to verifying that the permittees are carrying out the terms of the DRECP. Compliance monitoring information typically includes a summary of dates of completion, revisions, and implementation progress of the DRECP. The compliance monitoring framework for the DRECP is described in Section II.3.1.3.4.1.

Effectiveness monitoring assesses the status of ecological, natural communities, and Covered Species conditions in the reserve and other portions of the Plan Area where conservation actions are implemented over time and evaluates whether the conservation actions are contributing to meeting the BGOs. Section II.3.1.3.4.2 describes the effectiveness monitoring framework and effectiveness monitoring phasing for the DRECP MAMP.

Project-level Monitoring refers to monitoring that occurs in association with individual projects to ensure compliance with permit terms and conditions. For projects on non-BLM lands, project-level monitoring would be the responsibility of the permittee or third party with take authorization to document compliance sufficient to satisfy the requirements of the NCCP and GCP. For projects on BLM-administered lands, BLM would require holders of ROW grants to prepare and fund an ECCMP to ensure compliance with the BLM terms, conditions, and stipulations in the ROW grants, the Plan of Development, and required mitigation as provided for in the ROD (43 CFR 2805.16-17). Section II.3.1.3.4.3 describes the required project-level monitoring.

With respect to the BLM LUPA, *land use plan monitoring* is a consideration. NEPA requires mitigation monitoring in 40 CFR 1505.2(c), with additional specificity provided in the BLM NEPA Handbook (H-1790-1), Chapter 10 (BLM 2008a). The regulations in 43 CFR 1610.4-9 require that land use plans establish intervals and standards for monitoring, based on the sensitivity of the resource decisions. Land use plan monitoring includes both implementation and effectiveness, as described in Section II.3.1.3.4.4.

Validation monitoring assesses the validity of management actions (including the techniques or technologies employed) to sufficiently accomplish the objectives originally conceived, as described in Section II.3.1.3.4.5. In practice, validation monitoring is often combined with effectiveness monitoring.

II.3.1.3.4.1 Compliance Monitoring

Compliance monitoring would be used to track the status of DRECP implementation with regard to administrative duties of each the agencies in the DRECP Coordination Group and to verify that the Plan permittees are carrying out the terms and conditions of the DRECP contained in the Plan, and permits issued under the NCCP and GCP. The DRECP Coordination Group, through their respective agency responsibilities relative to project permit conditions, would be responsible for monitoring the Plan permittees' activities and ensuring that Plan permittees provide the information to the DRECP Coordination Group needed to conduct adequate compliance monitoring for the entire DRECP.

Information to support compliance monitoring would be reported annually by the DRECP Coordination Group and would include documentation of:

- Summary of all Covered Activities conducted the previous year including, but not limited to:
  - Project description summary, including type of project, types of environmental impacts (i.e., natural communities, Covered Species, modeled habitats), compliance monitoring contractor, and avoidance, minimization, and mitigation measures implemented during the project
  - Total impacts to Covered Species and/or their modeled habitat as a result of Covered Activities in the previous year
  - Total impacts to nonbiological resources as required by the project permitting agency
  - Total impacts to Covered Species and/or their modeled habitat as a result of Covered Activities to date since commencement of the DRECP (e.g., the effective date)
- Summary of avoidance and minimization measures implemented in relation to Covered Activities in the previous year, including:
  - Implementation of environmental compliance monitoring programs
  - Implementation of environmental training for compliance monitors and contractor education

  - Results of compliance monitoring programs, including successes and problems or issues in implementing avoidance and minimization measures
  - Variances to authorized Covered Activities granted during compliance monitoring
  - Description of compliance contractors
- Conservation actions initiated, continued, or completed in the previous year, including habitat additions to the reserve system and management actions
- Conservation actions initiated, continued, or completed to date since commencement of the DRECP (e.g., the effective date)
- Conservation actions planned to be initiated, continued, or completed the next 5 years.
- A running tabulation of habitat created, restored, protected, or enhanced under the Plan during the previous year and to date since commencement of the DRECP (e.g., the effective date)
- Description of all findings, conclusions, and results of effectiveness monitoring, research, or conservation actions previously undertaken, including an evaluation of any significant issues encountered during effectiveness monitoring
- Summary of significant communications and interactions among DRECP participants, including the Coordination Group, Adaptive Management Team, Stakeholder Working Group, Partners Working Group, permitting agencies, other state, federal, or local agencies, scientists and other interested parties during the previous year, including formally scheduled meetings, significant issues related to DRECP implementation and/or Covered Activities, conflicts, and resolution of conflicts
- Description of any enforcement actions taken by the permitting agency(ies) during the previous year
- Description of expenditures of funds to implement the DRECP during the previous year
- Description of expenditures of funds to implement the DRECP to date since commencement of the DRECP (e.g., the effective date)
- Description of any activities to secure funding for conservation actions (e.g., grant applications) during the previous year
- Description of any DRECP modifications or amendments proposed or approved during the previous year
- Description of any clerical corrections or errata made to the DRECP during the previous year

The permitting agencies would work with the Coordination Group to ensure compliance with the conservation actions in the DRECP and the terms and conditions of the permits issued under the GCP and NCCP.

II.3.1.3.4.2 Effectiveness Monitoring

Effectiveness monitoring is critical to informing the adaptive management of biological resources and evaluating the overall effectiveness of the DRECP conservation strategy. The effectiveness monitoring component of the DRECP MAMP described in this section was developed together with the adaptive management framework described in Section II.3.1.3.5 and by integrating key guidance on developing monitoring programs, as summarized in Section II.3.1.3.2. Table II.3-16 outlines the elements of the DRECP effectiveness monitoring framework and the phases when these elements would be developed and implemented.

Table II.3-16
Effectiveness Monitoring Framework Elements and Phasing

Effectiveness Monitoring Framework Elements[1]	Phase[2]
Biological Goals and Objectives (BGOs). Effectiveness monitoring would be used to evaluate the specific stated goals and/or objectives for the ecological processes, natural communities, and Covered Species. The effectiveness monitoring component of the DRECP MAMP would be designed to assess achievement of the Step-Down Objectives (DRECP NCCP Objectives) and the contribution of Plan implementation to achieving the Plan-wide BGOs.	Plan development phase; draft BGOs provided in Appendix C.
Scope of the Effectiveness Monitoring. The scope of the effectiveness monitoring effort in terms of geography, land ownership, responsible entity, use of monitoring information, spatial scale, temporal scale, and available resources.	Plan development phase (initial framework of the monitoring scope is described in Section II.3.1.3.4.2); scope refinement would occur during the early Plan implementation phase.
Existing Information Assembly, Synthesis, and Prioritization. The best available information, as compiled for use in developing the DRECP, and as developed during Plan implementation, for ecological processes, natural communities, and Covered Species would be synthesized to set monitoring priorities. The information synthesis process would include grouping resources for monitoring efficiencies and development of management-oriented conceptual models to depict important stressors, threats, and uncertainties and potentially make management outcome predictions. Other tools or models (e.g., intactness modeling, conservation values modeling) may also be developed during this phase in order to set monitoring priorities.	Plan development and early plan implementation phases; Baseline Biology Report (Appendix Q) and the biological resources environmental setting (Chapter III.7); synthesis and prioritization would primarily occur in the early Plan implementation phase.

Table II.3-16
Effectiveness Monitoring Framework Elements and Phasing

Effectiveness Monitoring Framework Elements[1]	Phase[2]
Recommended Monitoring and Monitoring Approaches. Recommendations on what and how response variables would be monitored and how the response variables would be used to assess effectiveness (e.g., monitoring interests such as population trends or habitat quality). Monitoring protocols, techniques, locations, and frequencies would be specified.	Early Plan implementation phase; initial monitoring approach considerations for the Covered Species is provided in Table II.3-17.
Monitoring Implementation Strategy. Logistics for implementing the effectiveness monitoring would be developed (e.g., staffing, equipment, schedules) and coordinated with cooperating federal, state, and local agencies and other entities.	Early Plan implementation phase.
Monitoring, Data Management and Analysis, and Reporting. Monitoring would be conducted and data would be analyzed, managed, and reported according to specifications developed in the early Plan implementation phase.	Early and long-term Plan implementation phases; initial framework for the data reporting described in Section II.3.1.3.4.2.
Inform Adaptive Management Decision-Making. Monitoring results would inform adaptive management throughout MAMP implementation as described in the Adaptive Management Framework (Section II.3.1.3.5).	Early and long-term Plan implementation phases.

1 The effectiveness monitoring framework elements described here are based on the integration of the guidance from BLM (2014), Atkinson et al. (2004), and the Five-Point Policy. See Section II.3.1.3.2.

2 The phase provided here is intended to frame when the primary development and implementation of the effectiveness monitoring elements for the DRECP would occur. The Plan development phase includes the period up until the DRECP is approved. The early Plan implementation phase is generally considered to be the first 5 years of Plan implementation. The long-term Plan implementation phase may begin upon Plan approval or may begin following the early Plan implementation phase, depending on the monitoring activity. As noted by Atkinson et al. (2004), effectiveness monitoring elements may be in different phases for different resources, and all elements may be revisited and refined throughout MAMP implementation.

Effectiveness Monitoring Framework

This section describes the framework for the effectiveness monitoring component of the DRECP MAMP, which would be developed and refined over several phases as shown in Table II.3-17.

Biological Goals and Objectives and Effectiveness Monitoring Scope

Effectiveness monitoring would be used to evaluate progress towards achieving the stated goals and objectives for the ecological processes, natural communities, and Covered Species. The effectiveness monitoring component of the DRECP MAMP would be specifically designed to assess achievement of the Step-Down Biological Objectives and the contribution of Plan implementation to progress towards achieving the Plan-wide BGOs. The DRECP BGOs are provided in Appendix C.

The scope of the DRECP effectiveness monitoring program takes into consideration geography, land ownership, responsible entity, use of monitoring information, spatial scale, temporal scale, and available resources. The following provides the draft framework for the scope of effectiveness monitoring under the DRECP MAMP:

- As described in Section II.3.1.3.3, the Adaptive Management Team would be responsible for implementing effectiveness monitoring and coordinating with other, ongoing federal, state, and local monitoring efforts within and adjacent to the Plan Area.
- Effectiveness monitoring would occur in BLM LUPA conservation designation lands, in lands added to the DRECP reserve system on non-BLM land, and other areas outside the reserve system where conservation actions are implemented.
- The effectiveness monitoring component of the MAMP would be implemented at several spatial scales to monitor landscape and ecological processes, natural communities, and Covered Species.
- Elements of the effectiveness monitoring program would be developed, refined, and implemented in several phases, as shown in Table II.3-17.

Existing Information Assembly, Synthesis, and Prioritization

The best available information, as compiled for use in developing the DRECP and as developed during Plan implementation, for landscape and ecological processes, natural communities, and Covered Species would be synthesized to set monitoring priorities. The information synthesis process would include grouping resources for monitoring efficiencies (e.g., riparian communities and associated covered riparian birds), and developing management-oriented conceptual models to understand relationships among important stressors, threats, and management uncertainties. Other tools or models (e.g., ecological processes models) may also be developed to set monitoring priorities.

As described in Williams and Brown (2012), monitoring serves the following purposes in an adaptive management framework: (1) evaluate progress toward achieving objectives; (2) determine resource status in order to identify appropriate management actions; (3) increase understanding of resources dynamics by comparing predictions with actual monitoring data; and (4) develop and refine models of resource dynamics. One of the most difficult aspects of developing effective monitoring in an adaptive management framework is implementing the action with a sound experimental design that can accomplish these purposes. As stated in DRECP ISA (2010), "Hypotheses about processes and interactions that characterize sustainable populations, as well as proximate and ultimate stressors that affect them, need to be identified." Management-oriented conceptual models, as described

in Section II.3.1.3.5.1, are used to help identify and define appropriate hypotheses for adaptive management and the proper response variables.

Management-oriented conceptual models and other modeling tools are critical for adaptive management as they provide the means to explore alternative management actions and test hypotheses and other assumptions. The models available during the Plan development stage include several existing management-oriented conceptual models relevant to the DRECP Covered Species, natural communities, and ecological processes, a terrestrial landscape intactness model, a conservation values model, and several climate change models. The Adaptive Management Team would use these tools and other models developed during Plan implementation as described in Section II.3.1.3.5.1.

By synthesizing the best available information and by utilizing modeling tools, the Adaptive Management Team would set monitoring priorities. The initial set of recommended monitoring was developed through the Plan development process and is provided below. The Adaptive Management Team would identify and recommend effectiveness monitoring priorities to the DRECP Coordination Group, as described above, during the early Plan implementation phase and periodically throughout the long-term Plan implementation phase.

Recommended Monitoring, Monitoring Approaches, and Implementation

As described above, within an adaptive management framework, prioritizing effectiveness monitoring would be an ongoing process throughout the duration of Plan implementation. Monitoring priorities may change over time for several reasons, including changes in resource status (e.g., increasing or decreasing endangerment of a Covered Species), refinements of management-oriented models (e.g., identifying a heretofore unknown variable relevant to species viability), and changes in stressor and threat levels or types (e.g., a new emerging disease or invasive species). Based on existing available information, initial effectiveness monitoring commitments identified during the Plan development phase include:

1. Landscape and Ecological Processes Effectiveness Monitoring: The effectiveness of the DRECP reserve design and implemented conservation actions would be evaluated as they relate to the following landscape and ecological process:
    a. Wildlife movement and habitat linkage function
    b. Aeolian transport
    c. Hydrologic processes

2. Natural Community Effectiveness Monitoring
    a. Long-term natural community change monitoring: To evaluate long-term changes in natural community structure and related habitat value for Covered Species, long-term change monitoring would be initiated in the early Plan implementation phase and would be conducted every 5 years for the duration of the Plan. This long-term natural community change monitoring would occur across the Plan Area in key geographic locations or ecoregion subareas, as prioritized during the initial Plan implementation phase. At the reserve system-scale, employing remote sensing technologies would allow for efficient and cost-effective monitoring by satellite or aerial imagery, possibly combined with LIDAR (Light Detection and Ranging). These technologies would provide information about general changes in vegetation community patterns, including distributional patterns of general communities (e.g., desert scrubs, grassland, riparian and woodland, etc.), as well as height, cover, and density. Such data may allow for development of automated change detection algorithms.
    b. Subject to available funding, completion of the alliance-level vegetation mapping of the Plan Area would be conducted to produce a seamless baseline natural community dataset.
    c. Long-term habitat restoration/enhancement effectiveness monitoring, including setting success criteria and contingencies for remediation of unsuccessful restoration/enhancement actions.
3. Covered Species Effectiveness Monitoring
    a. Desert tortoise range-wide population monitoring (implementation contribution to existing program)
    b. Mohave ground squirrel range-wide population monitoring (program establishment and implementation): Monitor known populations/suitable habitat at least once every 5 years to determine changes in distribution or status. Design monitoring to capture demographic data (probably on a more limited spatial scale, but on a more frequent temporal scale) and information on potential stressors that limit population growth.
    c. Mohave ground squirrel Data Gap Baseline Studies: Subject to available funding during the first 5 years of Plan Implementation, the DRECP Coordination Group will complete baseline studies of Mohave ground squirrels in identified data gap areas to determine presence or absence of population centers (see Appendix H).
        i. Known data gap areas within the Plan Area include:

1. South of Edwards Air Force Base from Saddleback Butte State Park east to the Los Angeles County line, and south to the California aqueduct.

ii. The baseline study will be conducted for the duration of the active season (from at least March 1 through July 31), unless a population center is positively identified prior to the end of the season.

iii. The baseline study will follow a fall/winter season of sufficient rainfall, which is at least 85 millimeters. Occupancy of a population center may not be considered negative after a year of drought (less than 85 millimeters of rainfall).

iv. If the DRECP Coordination Group concludes a population center occurs in a data gap area, the DRECP Coordination Group will map the suitable habitat area supporting the population center, contiguous suitable habitat surrounding the population center, and suitable habitat linkages to the other population centers. Any new Mohave ground squirrel Important Areas identified by the DRECP Coordinating Group will be subject to the same requirements as those applied to existing Mohave ground squirrel Important Areas in the DFAs.

d. Bird and bat Covered Species Plan-wide monitoring of operational effects and effectiveness of implemented avoidance, minimization, and compensation; implemented in conjunction with project applicant mortality monitoring and other required mitigation monitoring using standardized monitoring protocols that allow for application of consistent, reserve system-wide analytic methods.

e. Agriculture-dependent Covered Species monitoring: Monitor population trends and effectiveness monitoring for conservation actions for agriculture-dependent Covered Species, including burrowing owl, greater sandhill crane, mountain plover, and Swainson's hawk.

f. Plant Covered Species Plan-wide population monitoring

g. Common raven management Plan-wide monitoring: Monitoring of the effectiveness of raven management actions implemented Plan-wide (likely in conjunction with desert tortoise monitoring).

In the early Plan Implementation phase (within 5 year of Plan approval), the Adaptive Management Team would develop monitoring approaches (e.g., protocols, data collection standards) for these monitoring commitments and monitoring priorities identified in the future. Table II.3-17 provides a summary of potential response variables and monitoring approaches/considerations for the DRECP Covered Species, which would be used by the

Adaptive Management Team to develop monitoring approaches for recommended and prioritized monitoring efforts; however, the Adaptive Management Team would have the flexibility to design and implement a monitoring program that meets the Plan-wide BGOs and the DRECP Step-Down Biological Objectives, as necessary.

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
Amphibians and Reptiles			
Agassiz's desert tortoise	*Gopherus agassizii*	• Recruitment • Survival • Population growth • Density and abundance • Occupancy rates • Distribution (including relative distributions of live tortoises and carcasses that may indicate dieoff areas) • Habitat quality and quantity • Habitat loss • Habitat degradation • Individual tortoise body condition (e.g., size, evidence of disease) • Other threats (e.g., OHVs, non-native species, ravens, climate change effects, etc.)	U.S. Fish and Wildlife Service 2011; Tracy et al. 2004 • Population Monitoring ○ Conduct annual range-wide surveys using randomly selected line distance transects (e.g., Buckland et al. 2001; Anderson and Burnham 1996) ○ Stratify by Recovery Unit (e.g., Western Mojave, Eastern Mojave, Northern Colorado deserts) and by regions within Recovery Units ○ Density estimates (e.g., from number of tortoises per kilometer, including live tortoises and carcasses) ○ Other sign such as burrows and scat. ○ Proportion of adults and subadults (e.g., recruitment) ○ Occupancy estimates (e.g., MacKenzie et al. 2002, 2003) • Behavioral studies (e.g., post-hatch movement, juvenile dispersal, disease transmission, sex differences) • Habitat Monitoring ○ Remote sensing using aerial image data (e.g., general vegetation communities), slope, elevation, etc. to develop methods for change detection ○ Habitat modeling ○ On the ground assessments of habitat covariates during line distance transects ○ Threat assessments such as OHV damage, non-native species, wildfire, etc. along line distance transects or through remote sensing.
Flat-tailed horned lizard	*Phrynosoma mcallii*	• Sand field conditions • Vegetation conditions • Prey availability • Presence/absence	• Conduct habitat monitoring (based on Barrows and Allen 2009 and Allen et al. 2005) ○ Establish randomly or pseudo (stratified)-randomly selected monitoring belt transects in suitable habitat (e.g., 10 x 100 m in stabilized sand

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
		• Relative abundance • Occupancy rates • Human disturbances	fields and active dunes) ○ Stratification variable may include: active sand dunes, sand hummocks, ephemeral sand fields, and mesquite dunes • Conduct species presence/absence surveys ○ 6 surveys/plot during June/July (verified as adequate based on power analysis to detect plot differences when average difference was >1.7 lizards) ○ Tracks may be suitable for assessing presence and relative abundance to species and age class ○ Initiate surveys when sand temperature is ≥ 35° C and continue until high angle of sun reduces ability to detect /identify tracks ○ Record all fresh tracks in 10 x 100 m plot ○ Record individuals in 10 x 100 m plot • Record habitat covariates ○ Ant abundance using pit fall traps in April (peak activity period) (3 traps per 10 x 100 m plot) ○ Density of perennial shrubs measure for entire 10 x 100 m plot ○ Percent cover of annual plants using 1 m^2 quadrat at 12 sample sites in each plot ○ Sand compaction using penetrometer and sieve for grain distribution • Conduct population monitoring (e.g., survivorship) using mark/recapture on 2-ha study plots, each superimposed on 10 x 100 m plots. ○ Use beaded wire with unique color combinations ○ Conduct approximately 8 surveys/month during March-November period ○ Walk entire plot and record snout-vent length, reproductive status, and position in study plot using GPS.

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			○ Applicable for focused surveys but probably too labor intensive for broad-scale monitoring • Conduct distance sampling ○ Used to estimate population sizes and/or densities Requires visual detections from a transect and large sample sizes (e.g., >50 individuals) so may be difficult to implement
Mojave fringe-toed lizard	*Uma scoparia*	• Sand movement • Dune habitat conditions • Human disturbances • Presence/absence • Relative abundance • Occupancy rates	• Conduct habitat monitoring (based on Allen et al. 2005 and Barrows 1997) ○ Establish belt transects (e.g., 10 x 1,000 m, but depends on size of habitat patch) along slope contour using random starting point ○ Measure vegetation cover along transect using point-intercept method or counting all perennial species in plot ○ Measure plant richness by recording all species in patch or using releve or quadrat sampling ○ Measure substrate conditions (i.e., compaction) using penetrometer and sieve for grain distribution • Conduct species presence/absence surveys ○ At least 6 presence/absence surveys May-June between 0900 and 1200 hrs at temperature range of 33-43° C unshaded at 1 cm above sand surface ○ Record both individuals and tracks (if identifiable to species tracks may be more reliable than detections of individuals) to develop relative abundance indices. ○ Consider use of PAO if applicable (MacKenzie et al. 2006) and minimum sampling requirements can be met ○ Consider conducting 6 September/October surveys on each plot to record young of the year • Conduct population monitoring using mark/recapture (see horned lizard)

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			○ Limited to focused questions that could be done at smaller spatial scale due to intensive field effort. • Conduct distance sampling ○ Used to estimate population sizes and/or densities Requires visual detections from a transect and large sample sizes (e.g., >50 individuals) so may be difficult to implement
Tehachapi slender salamander	*Batrachoseps stebbinsi*	• Presence/absence • Relative abundance • Occupancy rates • Population size/density • Macro- and microhabitats • Threats (grazing, wild pigs)	• Conduct presence/absence monitoring ○ Rainy/damp periods (typically February-March) ○ Cover-controlled active sampling method (e.g., Lowe 2003; Lowe and Bolger 2002) ○ Time-constrained transects within randomly selected plots (e.g., McKenny et al. 2006) ○ Area constrained searches ○ Avoid destructive methods that permanently disturb refugia (rocks, logs, debris) ○ Repeated surveys throughout active period (establish reference sites if possible) (but see Smith and Petranka 2000 for discussion of single vs. repeated survey results). ○ Non-invasive mark-recapture (e.g., flourescent elastomer to assess population size and other variable such as movement) ○ Cover boards along transects or in plots? (e.g., Brooks 2001) • Demographic/behavioral studies (e.g., reproduction, survival, recruitment and population growth, home ranges, dispersal, etc.) • Habitat assessment and modeling (e.g., Bowles et al. 2006; Lowe and Bolger 2002) ○ Substrate characterization (e.g., rocks, woody debris, leaf litter) using visual or other methods (e.g., embeddedness of rocks)

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			○ Hydrology and water chemistry (e.g., dissolved oxygen, conductivity, acidity, temperature) ○ Slope and aspect ○ Vegetation characteristics (woodland canopy, yucca, understory cover, etc.) ○ Other disturbances/threats (e.g., grazing, wild pig rooting, etc.)
Riparian birds			
Least Bell's vireo	*Vireo bellii pusillus*	• Presence/absence • Occupancy rates • Nesting pairs • Reproductive success • Nest parasitism • Native and non-native plants • Hydrology (surface and ground water) • Geomorphology (e.g., sediment transport and deposition) • Natural flood disturbance regimes • Human/cattle disturbances • Urban-related invasive animals/predators (Argentine ants, domestic and feral cats, and other mesopredators)	• Implement CRAM for evaluations of landscape setting, hydrology, geomorphology, plant communities, biotic structure, etc. • Conduct avian surveys at point locations approximately at least 200 m apart within riparian zones (or along point locations along edge of riparian patch were riparian area cannot be penetrated without damage). ○ Conduct 3-4 surveys (ideally 4, depending on budget) between late May and mid-July to ensure that distinction can be made between nesting and migrating populations ○ Conduct 15-minute point counts between sunrise and 0900, with counterbalancing of survey times at the sites over the set of surveys ○ Employ double observer method to increase and evaluate detection probability, where second observer surveys same site some fixed time later (e.g., 30 minutes) ○ Record all species observed (including non-target species) by sight or sound ○ Record distance to nearest meter from observer point to detected bird ○ Record incidental detections of target species between point counts and during reconnaissance visits, habitat assessments, etc. ○ Small numbers of detections may limit use of point counts for density or occupancy estimates, but presence/absence data will be valuable Consider arthropod sampling, including invasive ants such as Argentine ant and red imported fire ant, using pitfall trapping associated with point counts
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*		
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)		

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
Rails			
California black rail	*Laterallus jamaicensis coturniculus*	• Presence/absence • Occupancy rates • Nesting pairs • Reproductive success • Daily and seasonal sub-surface and surface water levels and fluctuations • Invasive plants (tamarisk) • Urban-related predators (non-native rats, cats and red fox)	Conway 2011; also see website at http://www.cals.arizona.edu/research/azfwru/NationalMarshBird/ • Point counts at emergent marsh locations • Space points counts by > 400 m to avoid double-counts and pulling in birds with playback (unless smaller spacing is considered desirable for some reason); if within a grid, each cell should be at least 16 ha (400 m^2); a grid may also be randomly subsampled. • Sampling stratification may be required to ensure representative sampling of suitable habitats • 5-minute passive surveys followed by 1-minute surveys using vocalization broadcast; morning and/or evening surveys during vocalizing periods (e.g., 2-hours around sunrise and sunset) • Record distance only during 5-minute passive survey (birds may move toward broadcast vocalization, violating the assumptions for distance sampling analyses) • Play standardized vocalizations for rails (obtainable from Marsh Bird Survey Coordinator listed in Conway 2011) for 30'' followed by 30" silence. • At least 3 survey passes during peak of breeding season, conducting at least one survey within each of three 15-day survey windows - survey timing should be calibrate to breeding phenology of surveys region; surveys should be conducted prior to young-of-the-year vocalizations to ensure data are for the adult breeding population • estimate detection probability and apply to density estimates or occupancy rates • measure habitat covariates at sample points
Yuma clapper rail	*Rallus longirostris yumanensis*	• Presence/absence • Occupancy rates • Nesting pairs • Reproductive success • Daily and seasonal sub-surface and surface water levels and fluctuations • Prey availability (crayfish) • Mesopredators (e.g., raccoon) • Contaminants (selenium)	

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
Other Birds			
Bendire's thrasher	*Toxostoma bendirei*	• Presence/absence • Occupancy rates • Nesting pairs • Reproductive success • Human/cattle disturbances • Cowbird parasitism • Competition with curve-billed thrashers and northern mockingbirds	• Conduct baseline surveys in suitable habitat to understand general distribution in Plan Area within DRECP reserve system • Conduct pilot study to establish appropriate and repeatable survey protocol for species, including detection probability, survey time each visit, and number of required annual site visits for robust sampling program • Conduct distance surveys at randomly selected point locations within suitable desert scrub, as determined through baseline surveys, in March-July over a time frame adequate for detecting trends in response variable (e.g., population abundance/size, occupancy rate) • Measure habitat covariates at sample sites (e.g., presence of Joshua trees, other yuccas and thorny scrubs, disturbances such as OHVs, cattle grazing, wildfire)
Burrowing owl	*Athene cunicularia*	• Presence/absence • Occupancy rates • Nesting pairs • Reproductive success • Burrow site availability (e.g., ground squirrel burrows) • Foraging habitat suitability • Prey availability • Collision-related injury/mortality • Pesticide effects (loss of ground squirrel burrow, direct harm, loss of prey)	Manning 2009; Conway and Simon 2003; Conway et al. 2008. Manning (2009) methods: • Study-area-wide single pass census followed by stratified random sampling in grid cells (e.g., 3x3 km cells in Imperial Valley) • Single-stop car surveys and visual surveys along roadsides, dirt roads, and ROWs along irrigation canals, drains and ditches in known population centers • Morning survey (e.g., dawn to 10-11:30 am) or late afternoon survey (4 pm to dusk) • 3 survey passes • Record status (single, pair, adult, young) • Type of perch (e.g., burrow, bare ground, flying only, artificial structure, vegetation, etc.)

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
		• Urban-related predators (cats and dogs)	• Record habitat covariates such as number of available burrow, squirrel activity, presence of alfalfa in 4 preceding years (Manning 2009), existing uses at time of survey Conway and Simon (2003) • Compared point counts, walking line-transect, and driving surveys (points below are only for point counts, which was recommended method) • Survey known population centers (e.g., Imperial Valley, western Mojave, Palo Verde Valley) Call broadcast following passive survey (e.g., Conway and Simon 2003) • At least 3 surveys passes survey year during peak breeding season: laying/incubation period; early nestling period; and late nesting period • Point counts surveys at stations separated by at least 0.8 km (0.5 mile) to ensure independence of nest sites (i.e., two different sites not used by same individuals) • 6-minute point count survey (from outside car; e.g., compare to Manning 2009); tested both passive (silent) surveys and call broadcast surveys (3 minutes silent + 3 minutes call broadcast) • Each point count surveys conducted by three different observers spaced by 20-minute intervals (i.e., 3 replicates per surveys pass at each station) • All point counts surveys conducted between 0600 and 1115 • Distance from observer and whether owl at burrow recorded • Detection probability calculated for occupied nest site, not individuals • Notable conclusions ○ Overall recommendation is to use points counts (contrast with Manning 2009) ○ Walking line-transects not viable method for monitoringm ○ Points counts better in regard to number of owls detected per unit

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			distance ○ Driving surveys better for number of owls per unit of survey time ○ Selection of point counts vs. driving surveys methods would depend on monitoring objective; i.e., focus on efficiency (driving) or maximizing counts (point counts) ○ Detection probability highest for point counts (0.64) because owls can be detected at farther distances compared to driving surveys (0.37 detection probability) – note these absolute detection probabilities cannot be generalized to other regions or observers ○ Call broadcast increased detections, but birds may habituate over time and stop responding (which can introduce error, especially for within-pass replicates) – consider using broadcast as a supplement to standardized passive surveys to maximize detections but use caution in any statistical analyses
California condor	*Gymnogyps californianus*	• Presence/absence as forager • Contaminants (lead contamination of food resources, ingestion of microtrash and other contaminants such as antifreeze) • Collisions and electrocutions (power lines, towers, and other tall structures) • Attractants (e.g., human activities)	• Periodic review of USFWS GPS dataset to understand spatial use of Plan Area • Mortality data for Plan Area • Data from project monitoring activities
Gila woodpecker	*Melanerpes uropygialis*	• Presence/absence • Occupancy rates	• Conduct baseline surveys in suitable habitat to understand general distribution in Plan Area within DRECP reserve system

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
		• Nesting pairs • Reproductive success • Riparian woodland habitat quality (old growth, uplands with large, columnar cacti) • Invasive plants (tamarisk) • Competition (loss of nesting cavities to starlings) • Wildfire effects	• Conduct pilot study to establish appropriate and repeatable survey protocol for species, including detection probability, survey time each visit, and number of required annual site visits for robust sampling program • Conduct distance surveys at randomly selected point locations within suitable desert scrub, as determined through baseline surveys, in March-July over a time frame adequate for detecting trends in response variable (e.g., population abundance/size, occupancy rate) • Measure habitat covariates at sample sites (e.g., presence of Joshua trees, other yuccas and thorny scrubs, disturbances such as wildfire and invasives such as tamarisk)
Golden eagle	*Aquila chrysaetos*	• Active nests/territories • Reproductive success • Migrants and floaters vs. nesting pairs • Human disturbances • Collisions/electrocutions • Contaminants (e.g., lead) • Wildfire effects on prey densities	Two main approaches – sampling-based density/population estimate (Nielson et al. 2010) and inventory (Pagel et al. 2010) • Estimated gold eagle numbers by aerial line transect surveys (fixed-wing aircraft) using mark-recapture procedures in months of August/September (after juveniles had fledged and birds began migration) • Goal was to detect 3% annual population decline over 20-year period with statistical power ≥0.8 with 90% confidence interval ($\alpha = 0.1$) • Surveys conducted from sunrise to 1300 hrs. • Estimated distance from transect line by (1) flying to perched birds from transect line and (2) flying to location where flying birds were first detecting and recording GPS coordinates • Observed birds assigned to age class – Adult, Unknown Adult (Adult or older Immature), Older Immature (Sub-adult), Juvenile, Unknown Immature (Juvenile or Older Immature), and Unknown • Applied "mark-recapture distance analysis" using line transect (distance) sample analysis methods (Buckland et al. 2001) combined with mark-

Table II.3-17
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Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			recapture (provided by multiple observers) to account for <1.0 detection probability even at minimum distances (Borchers et al. 2006). (Note: standard program DISTANCE analysis was not used due to detection issues specific to using fixed wing aircraft; i.e., the detection functions are different compared to ground-based line transects where detection is considered to be 1.0 on the transect itself and progressively smaller at distances from the transect; therefore a nonparametric kernel-based method was used to determine the detection function). Pagel et al. 2010. • Inventory (baseline) surveys in suitable habitat that has not been adequately surveyed and areas with historical or recent occurrence information • Determine presence/absence of active nests/territories by conducting at least 2 complete aerial surveys within a single breeding season; or at least 2 ground observation surveys of at least 4 hrs duration and where all potential active and alternate nests can be visually observed (surveys <4hrs acceptable when observation is positive, behavior indicates eggs or young, or eagles are being disturbed) • 2 observation periods separated by at least 30 days, but flexible based on behavior of adults and age of observed young ○ 1st survey tied to local nesting dates and related to courtship when birds are conspicuous ○ Surveys conducted in morning hours, ideally around dawn or shortly after ○ See Pagel et al. (p. 12) for other appropriate survey conditions and cautions to avoid harm, harassment or mortality during surveys ○ Also see Pagel for aerial survey guidelines and precautions ○ Ground observation post (OP) for known territories established

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			between 300 m and 1600 m. • Reproduction data ○ Eggs, dead or alive young, nest failure ○ Fledgling success – young at least 51 days of the age or known to have fledged from an observed nest.; can also be inferred (see Pagel et al. 2010, Nesting outcomes, p. 17) • Habitat covariate information may include height and type of nest site (e.g., type of rock, species of tree) and nest aspect, forage location, prey (if observed) • Other monitoring survey types ○ Winter surveys ○ Migration surveys
Greater sandhill crane	*Grus canadensis tabida*	• Presence/absence • Winter flock size • Roosting habitat hydrology • Agricultural management (e.g., crop types) • Collisions (powerlines, fences) • Human disturbance	Ivey et al. 2014. • Monitor occurrence as winter visitor at main wintering regions (Imperial Valley south of Salton Sea and along Colorado River) • Monitor both roosting (shallow wetlands) and nearby foraging sites (ag fields supporting alfalfa and milo • Use combination of roost counts, roadside surveys, and aerial surveys to estimate abundance and distribution • Roost counts ○ Biweekly counts at major roost sites throughout wintering period within 2 or 3 day period for each count ○ Conduct visual counts at roosts at sunset when birds are flying in or in early morning before birds leave roost • Aerial surveys of roost sites using stratified sampling of high and low density roost survey blocks to provide unbiased abundance estimate ○ Partition survey blocks into line transects and randomly sample a

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Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			standard proportion of the each block (e.g., 10%) using fixed-wing aircraft ○ Calculate abundance separately for high and low density blocks • Roadside abundance surveys of foraging sites to distinguish the three subspecies (greaters, lessers, and Canadians) that may occur in Plan Area (note: reliable distinctions between greaters and Canadians are problematic due to latter's intermediate size) ○ Biweekly surveys during morning feeding periods (e.g., 0700-1000) from vehicles ○ Use ratio of greaters to lesser to calculate sub-specific abundances for each roost site based on the aerial roost counts
Mountain plover	*Charadrius montanus*	• Presence/absence • Winter flock size • Collisions (farm equipment) • Human disturbance • Pesticide uses	Reiter et al. 2012. Also see Guidance for Developing and Implementing Effective Shorebird Surveys http://www.whsrn.org/sites/default/files/file/Shorebird_Monitoring_Guidance_2009.pdf • Monitor occurrence as winter visitor at main wintering regions (e.g., Imperial Valley south of Salton Sea, lower Colorado River, Antelope Valley/western Mojave); determining the appropriate sample frame (i.e., study area) within each sampling region likely will require pilot studies with inventories entire sampling frame. • Monitor winter use from October-March; e.g., counts 3-6 times over winter period; the appropriate time period to address variance may require pilot testing • Sample suitable wintering habitat in alfalfa, fallow agricultural fields, bare and plowed fields, burned fields (e.g., wheat), and grazed Bermuda grass grassland ○ Consider stratifying habitat patches if abundance systematically vary in

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			relation to habitat type ○ Each sample unit should be homogeneous cover type to extent feasible ○ If study areas are small, full sampling of all sites may be feasible (this will also depend on funding) • Need to account for likely high variability in winter use in assessing trends; address sample size (# of sites), size of habitat patches, as well as detectability and counting issues (a problem with larger flocks) • Determine sampling effort in large study areas needed to reliable detection of level of change as stated in monitoring objectives (e.g., 30-40% decline over 10 years) • Consider tradeoffs in concentrating surveys in areas high historical use (which reduces sampling variability) vs. more sampling of areas with less use (lower concentrations) to address range or habitat use area shifts (which may increase sampling variability); this tradeoff can be addressed by weighted stratified sampling approach with sampling focused on high concentration areas and more limited sample of lower concentration areas. Tradeoffs can be simulated using Generalized Random Tesselation Stratified sampling. • Sampling should be conducted from edge of sample patch to minimize disturbances • All birds in sample area visually detected should be counted; time limit probably not required other than for budgeting purposes • Truncation distance of about 200 meters to account for decline in detection probability (but this should be pilot tested) • Optimum time of day for surveys and other factors in variability (e.g., inter-observer variability) may need pilot testing; local experts should be consulted regarding time of day and other conditions that may affect detections such as temperature and wind conditions.

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			• See Reiter et al. 2012 for analytic methods and ways to address detection probabilities (which is a significant problem in estimating shorebird flock sizes), such as the "unreconciled double-observer method" described by Riddle et al. (2010)
Swainson's hawk	*Buteo swainsoni*	• Presence/absence • Nesting pairs • Reproductive success • Insecticide/pesticide effects (direct harm, loss of prey)	CDFG 2007; CEC and CDFG 2010 • Monitor breeding pairs/nesting status in Plan Area, primarily in Antelope Valley/western Mojave consistent with CDFW's goal to monitor long-term trends in breeding pairs and habitat changes in California • Implement sampling method and survey protocol to detect trends in Plan Area and contribute to statewide database • Determine breeding pairs/ square mile in Plan Area within defined nesting areas • Plan area represents "Sparse" nesting region, defined as average density of > one breeding pair per 76+ sq mi (CDFG 2007) • Conduct surveys in sample units of 1 square miles as needed (i.e., one or more times within nesting phases – see below) to generate confident count of nesting pairs in sample unit OR do complete census counts in important areas such as the Antelope Valley ○ Survey from vehicles whenever possible to avoid flushing to identify nest territory; max 5 mph speed with frequent stops ○ Walking surveys can be used to approach active nest once nesting territory is confirmed to record additional data such as tree species and height, nest height, etc.; walking to identify territories should only be done when driving is not feasible ○ Observations should be from 50-200 meters from potential nest locations and from several angles, with closer inspection nesting territory is confirmed ○ Surveys during nesting phases (suitable survey time of day)

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			▪ April 1-31 (arrival, nest building) – birds active but nesting may not be confirmed in this phase without extensive survey time; (all daylight hours) ▪ May 1-30 (egg laying, incubation) – detection may be difficult in this phase; (all daylight hours) ▪ June 1-July 15 (fledging) – young active and visible; (sunrise to 1200 hrs; 1600 hrs to sunset) • Record habitat characteristics ○ Height of nests and nest trees ○ Species of nest tree or description of other nesting substrate ○ Number/density of other trees in nest proximity ○ Evaluate potential foraging habitat within 5-mile radius of active nest sites • Record behavior and nest status ○ Vocalizations (territorial displays, courtship, mating, feeding, threats) ○ Perching, displays, flights to/from nest ○ Feeding ○ Nestlings and fledglings ○ Presence of other raptors that may be nest site and prey competitors • Monitor mortality/injury from wind projects
Tricolored blackbird	*Agelaius tricolor*	• Presence/absence • Nesting pairs • Nesting colony size • Reproductive success • Mesopredators • Poisons and contaminants • Human activities (recreation,	See the Tricolored Blackbird Portal: http://tricolor.ice.ucdavis.edu/node/4874 • Monitor nesting colonies in Plan Area in coordination with the Triennial Statewide Survey • Surveys typically mid- to late-April • Documents presence/absence and provides colony size numbers and distribution

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
		agricultural operations)	• Surveys conducted from 50-100 meters from nest colony • Survey time not standardized but should be sufficient to conclude absence of birds are not present (detection may be more difficult during incubation periods); usually at least 15 minutes • Absolute counts of small colonies (<500 birds) and estimates for large colonies • See Protocol on Portal for scanning methods: http://tricolor.ice.ucdavis.edu/content/tricolored-blackbird-statewide-survey-protocol • Record sex ratio • Record colony site habitat characteristic, including historical but abandoned colonies ○ Nest substrate (e.g., marsh, agricultural fields, non-native vegetation) ○ Area of nesting substrate (length and width, diameter, etc.) ○ Surrounding land uses, including nearby foraging areas (2-5 miles) (can use remote imagery to help identify surrounding uses) • Record colony behavior and status ○ Singing ○ Carrying nest material ○ Colony quiet ○ Carrying food ○ Fledglings
Fish			
Desert pupfish	*Cyprinodon macularius*	• Presence/absence • Population size • Competition/interference/predation with from non-native	CH2M Hill 2006 • Monitor populations ○ Census or randomly sample suitable habitats areas, with stratification as needed to represent different habitat types (e.g., ponds, drains,

Table II.3-17
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Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
		fish • Invasive snails • Hydrologic alterations • Agricultural pesticides	water depths, flow rates, etc.); sample sites should be as homogeneous or uniform as possible ○ Baited wire minnow traps (steels traps preferred to over plastic traps?) ○ 1-2 hr trap set times (to minimize risk due to conditions such as anoxia) (based on desert pupfish protocol; applicable to chubs?) ○ Dawn or dusk hours (based on desert pupfish protocol; applicable to chubs?) ○ Closed-population removal method (vs. trap-mark-recapture methods) using 3-4 sequential sampling passes and calculate depletion rate to estimate population abundance within each sample unit using available software programs (e.g., CAPTURE) ○ Captured fish are temporarily held during sampling • Measure habitat covariates at time of population sampling ○ Dimensions of sampled habitat (e.g., width, aerial extent) ○ Vegetation type and cover ○ Habitat substrate ○ Water chemistry/quality (e.g., salinity, dissolved oxygen, turbidity/clarity, temperature, pesticides and other contaminants) ○ Presence/absence of other vertebrate and focal invertebrate species, including potential non-native predators/competitors ○ Prey/forage • Monitor genetic status regarding integrity of isolated populations and potential hybridization • Monitor for diseases/pathogens/parasites (e.g., tapeworms)
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	• Presence/absence • Population size • Hydrologic alterations • Water quality • Predation/competition with non-native species • Habitat alteration by non-native species • Genetics (hybridization) • Parasites (tapeworms)	
Owens pupfish	*Cyprinodon radiosus*	• Presence/absence • Population size • Hydrologic alterations from diversions/ground water pumping • Non-native predators • Habitat alteration by cattails and other emergent vegetation encroachment	
Owens tui chub	*Siphateles (Gila) bicolor snyderi*	• Presence/absence • Population size • Hydrologic alterations	

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
		(overdrafting of Owens Valley aquifer) • Water quality • Non-native invasive predators • Habitat alteration by invasive emergent plants • Genetics (hybridization with other tui chub subspecies and hybrids) • Disease	
Mammals			
Desert Bighorn sheep	*Ovis canadensis nelsoni*	• Presence/absence • Population size • Reproductive success • Physical condition • Availability of water sources (especially near escape terrain) • Availability of nutritious forage (especially to support reproduction) • Use of crossing structures • Human activities (e.g., OHVs)	CDFG 2010; Epps et al. 2003; Gagnon et al. 2013. • Population monitoring ○ Periodic aerial-based estimates (next major helicopter survey scheduled for Fall 2014) ○ Mark-resight estimates ○ Cameras stationed at watering holds ○ Population estimates by size class and sex ○ Reproductive success ○ Genetic monitoring ○ Extirpations and natural colonizations/reintroductions of mountain habitats • Predator monitoring, especially in smaller, more isolated habitat patches ○ Mountain lion (e.g., GPS tracking to identify frequent kill sites) ○ Bobcat ○ Coyote • Habitat monitoring

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			○ Forage quality ○ Water sources in relation to foraging and escape habitat • Disease monitoring ○ Monitor sheep health at guzzlers and springs ○ GPS/Radio tracking to understand distribution and demographic of disease and disease transmission ○ Recent pneumonia outbreak in Plan Area is currently being tracked (NPS 2014) • Movement monitoring ○ Video and still camera surveillance (see Gagnon et al. 2013) at existing crossing structures (e.g., Interstate underpasses, any new overpasses, and selection culverts) and other high volume traffic roads ○ GPS tracking ○ Vehicle collision tracking
Mohave ground squirrel	*Xerospermophilus mohavensis*	• Presence/absence • Population size • Reproductive success • Habitat quality	Delaney and Leitner 2011; U.S. Air Force 2009 • Population monitoring ○ Camera "traps" (vs. live-trapping methods) to determine presence/absence ○ Monitor February-June during active period ○ Use in concert with live-trapping to conduct mark-recapture population estimates and long-term monitoring ○ Establish permanent sample transects, grids or trapping webs in key population areas, linkages, and expansion areas and interface zones with round-tailed ground squirrel (e.g., camera traps to monitor for potential range expansion) ▪ Consider rotating panel design to increase sample size ▪ Stratify by location and habitat type or suitability (e.g., based on

Table II.3-17
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Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			USGS model) ▪ Track transects for presence/absence (reasonably high accuracy with 2-3 visits – see U.S. Air Force 2009) ▪ Grids for presence/absence ▪ Trapping webs for population estimates using distance sampling methods (e.g., Buckland et al. 2001); effective radius of approximately 150 m ○ Five-day trap sessions • Monitor habitat covariates ○ Species components and percent cover ○ Invasive species, particularly non-native grasses ○ Substrate and terrain (e.g., sandy soils on level terrain suitable for burrowing vs. rocky soils or desert pavement and rugged terrain)
Bats			
California leaf-nosed bat	*Macrotus californicus*	• Presence/Absence at foraging sites • Relative abundance at foraging sites • Habitat quality at foraging sites • Presence/Absence at historical roosting site • Relative abundance at roosting site • Spatial relationship between suitable roosting sites and suitable foraging sites	Brown, P. 2006; Brown 2010; Miller 2001 • Monitor foraging habitat use ○ Conduct periodic acoustic surveys and/or mist netting surveys are key foraging locations (e.g., riparian zones, aquatic sites, washes) ○ Calculate abundance indices (e.g., Miller 2001) ○ Measure habitat covariates ▪ Vegetation type ▪ Habitat structure, including vegetation density, height, and width ▪ Prey availability • Monitor roosts (including covered and non-covered focal species) on periodic basis (ideally annually, but at least on 3-5 year cycles), including winter hibernacula and spring/summer maternity roosts; roost sites could be prioritized for monitoring based on size of colony, use (e.g.,
Pallid bat	*Antrozous pallidus*		
Townsend's big-eared bat	*Corynorhinus townsendii*		

Table II.3-17
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Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
		• Human disturbance of roosting sites • Pesticide use near suitable foraging sited	maternity, hibernaculum), disturbance risk, etc. ○ Abandoned mines ○ Natural roosts ○ Selection criteria (see Brown 2010) ▪ Historical roosts ▪ Maternity colonies ▪ Large colonies ▪ Accessible ▪ Protected by gates or location ○ Conduct exit counts, assisted by video cameras and acoustic recordings ○ Conduct acoustic monitoring at exit points of roosts ○ Conduct periodic captures using mist nets or harp traps at exit points of roosts to confirm some species poor detected/identified by acoustic methods (e.g., Townsend's big-eared bat, California leaf-nosed bat) (done separately from exit counts) • Continuous acoustic monitoring can be conducted over variable time periods (e.g., from 1-2 nights/month to several weeks or months), but may not be effective in detecting bats (or at least underestimate their occurrence) that have low intensity calls (e.g., Townsend's big-eared bat, California leaf-nosed bat)
Plants			
Alkali mariposa-lily	*Calochortus striatus*	• Presence/absence • Population size/distribution (e.g., aerial extent of occupied areas or number of individuals)	Elzinga et al. 2001. • Monitor populations ○ Census or sampling of populations depending on discrete population numbers, sizes, and distributions ○ Implement appropriate monitoring frequency
Bakersfield cactus	*Opuntia basilaris* var. *treleasei*		

Table II.3-17
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Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
Barstow woolly sunflower	*Eriophyllum mohavense*	• Reproductive success • Non-native species and other disturbance factors (e.g., trampling, grazing, herbivory, OHVs, dust) • Suitable substrate conditions (e.g., soil chemistry, texture, dunes) • Surface and subsurface hydrologic conditions • Wildfire effects • Indicator species • Pollinators and/or seed dispersers	▪ More frequent monitoring (e.g., annual or semi-annual) for highly variable species (at least in early years of MAMP implementation and especially in years with average-above average rainfall to establish extant populations that may not be detectable in dry years); e.g., alkali mariposa-lily, Barstow woolly sunflower, desert cymopterus ▪ Less frequent monitoring for less variable species unlikely to change over shorter time periods (e.g., every 3-5 years); e.g., Bakersfield cactus ○ Determine appropriate spatial monitoring protocol (depends on factors such as monitoring objective, definition of target and sampled populations and desired level of inference); for example: ▪ Stratify sampling units (or macroplots) based on habitat characteristics as necessary • Census within macroplot if feasible (depends on size of macroplot, species, etc.) ▪ Select appropriate sampling method within macroplot (see Chapter 8, Sampling Design, in Elzinga et al. 2001) • Quadrats – allows estimates of plant density or frequency • Line transects – usually for cover estimates, but also may be used to position quadrats or points • Point-intercept transects – usually used for cover estimates ▪ Pilot testing of sampling designs likely needed. • Monitor habitat suitability at sample sites ○ Substrates (including disturbances such as compaction, erosion, trampling) ○ Hydrology (e.g., surface flows, water tables) ○ Soil chemistry
Desert cymopterus	*Cymopterus deserticola*		
Little San Bernardino Mountains linanthus	*Linanthus maculatus*		
Mojave monkeyflower	*Mimulus mohavensis*		
Mojave tarplant	*Deinandra mohavensis*		
Owens Valley checkerbloom	*Sidalcea covillei*		
Parish's daisy	*Erigeron parishii*		
Triple-ribbed milk-vetch	*Astragalus tricarinatus*		

Table II.3-17
Covered Species Effectiveness Monitoring Approach and Considerations

Common Name	Scientific Name	Potential Response Variables	Monitoring Approaches and Considerations
			○ Non-native species such as non-native grasses that may compete for water and space and shade out native species (e.g., alkali mariposa-lily, Bakersfield cactus) ○ Herbivory • Monitor reproduction factors ○ Phenological monitoring ○ Pollination (e.g., Bakersfield cactus)

Monitoring; Data Management, Analysis, and Reporting; Adaptive Management Feedback

The Adaptive Management Team would implement the prioritized effectiveness monitoring according to the specific protocols and standards developed during the early Plan implementation phase. The results of effectiveness monitoring would be analyzed and reported by the Adaptive Management Team to the DRECP Coordination Group to be included in the annual reports prepared by the DRECP Coordination Group. The Adaptive Management Team would develop and maintain the DRECP data portal for data management, analysis, and reporting purposes, as is described in Section II.3.1.3.6.

The annual reports prepared by the DRECP Coordination Group would include a description of the effectiveness monitoring conducted the previous year and to date since commencement of the DRECP (e.g., the effective date). The report(s) for effectiveness monitoring prepared by the Adaptive Management Team would include at minimum:

- Data and information about who collected the data and the frequency, timing, and duration of data collection.
- A description of the data analysis and results.
- Synthesis/integration of the year's monitoring and management results with previous years as applicable (e.g., analyzing trends).
- Identification of any significant problems or successes with the program that may alter the monitoring and management program approach.
- Suggested changes/revisions to the monitoring and management program, if any, based on the points listed above.
- Documentation of changed or unforeseen circumstances that occurred during the previous reporting year and how they were addressed.
- Discussion of triggers for adaptive management and how they were implemented.

Monitoring results would inform adaptive management, as illustrated in Exhibit II.3-6 and described in Section II.3.1.3.5.

II.3.1.3.4.3 Project-Level Monitoring

Project-level monitoring is monitoring that occurs in association with individual projects to ensure compliance with permit terms and conditions. For projects on non-BLM lands, project-level monitoring would be the responsibility of the permittee or third party with take authorization to document compliance sufficient to satisfy the requirements of the NCCP and GCP. Permittees and third-parties with take authorization would be responsible for monitoring the project areas throughout all phases of construction and operation.

Project-level monitoring includes verifying that incidental take of Covered Species does not exceed the level authorized by the permit, and that the permittee is carrying out the terms and conditions of the incidental take permit. The project-level monitoring required for projects on BLM-administered lands is described below. Project-level monitoring for permits issued under the GCP is described in Section 7.3.1 of Appendix M (GCP).

Project-Level Monitoring on BLM-Administered Lands

BLM requires holders of ROW grants to prepare and fund an ECCMP to ensure compliance with the BLM terms, conditions, and stipulations in the ROW grants, the Plan of Development, and required mitigation as provided for in the ROD (43 CFR 2805.16-17). The ECCMP also ensures that environmental conditions are monitored during the construction, operation, and decommissioning phases of a project. The ECCMP identifies a compliance contractor; monitoring requirements for each of the environmental resources on a project site; establishes metrics against which monitoring observations can be measured; identifies potential mitigation measures; and establishes protocols for incorporating monitoring observations and additional mitigation measures into standard operating procedures and BMPs.

BLM Compliance Monitoring Contractor

The compliance monitoring contractor would provide a compliance manager and on-the-ground compliance monitors to oversee and conduct inspections of construction, operations, and decommissioning activities, to evaluate and document compliance or non-compliance with required project measures and conditions during such activities. The compliance manager would be the point of contact position designated by the compliance contractor and would report to the BLM Authorized Officer or the designated BLM Compliance Manager for all compliance-related issues. The on-site compliance monitor would report to the compliance manager and be responsible for observing and reporting compliance with all terms, conditions, and stipulations of the BLM ROW grants for construction, operations, and decommissioning activities. The BLM Authorized Officer would be the BLM official with administrative authority for ROW grant issuance and authority for accepting and approving project-related changes. The BLM may also identify additional staff as additional designated Compliance Contacts, as needed for a specific project.

Although the compliance monitoring contactor directly contracts with the applicant for compliance monitoring services, including designation of service fees, the contract between the compliance monitoring contractor and the applicant may not be terminated without prior authorization of the BLM Authorized Officer.

To meet the compliance monitoring objectives, the ECCMP would include several required elements:

- The compliance monitoring contractor's responsibilities on the behalf of the BLM
- The compliance monitoring contractor's day-to-day tasks
- The compliance monitoring contractor's decision-making authority

Typical tasks carried out by the compliance manager would include:

- Oversight of the ECCMP
- Preparation of relevant project materials
- Participation in the BLM preconstruction meeting
- Participation in the applicant's environmental compliance training program
- Supervision and review of all environmental monitoring activities, materials, schedules and budgets
- Supervision of the compliance monitors
- Guidance on and review of compliance issues
- Review and processing of variance requests (see *Variances* below), in coordination with BLM and permitting or reviewing agencies, as necessary
- Review and distribution of daily and other periodic reports
- Confer regularly with the BLM Compliance Manager and Compliance Contacts
- Serve as contact between BLM and applicant
- Serve as BLM's representative to permitting agencies, private landowners, and special interest groups regarding environmental compliance monitoring efforts and issues.

On-site compliance monitors would be qualified and experienced in their particular tasks and would possess all required authorizations and permits needed to carry out their monitoring tasks. All compliance monitors would be familiar with the ECCMP, participate in the BLM preconstruction meeting, participate in the applicant's environmental compliance training program, and receive additional training, as needed, from the compliance monitoring contractor. All compliance monitors would be familiar with the permit requirements, project organizational structure, required building codes, fire codes, construction, operations and decommissioning documents, other relevant building standards, environmental compliance reporting responsibilities, and the chain

of communication. Compliance monitors would maintain daily contact with the compliance manager.

BLM Compliance Monitoring and Reporting

The compliance monitoring contractor would be required to provide adequate full-time on-the-ground compliance monitors during all construction, operations, and decommissioning activities. The number of compliance monitors required at any given time would depend on the type of activities, and therefore would be subject to ongoing evaluation and adjustment over time. For example, large-scale grading activities during construction likely would require more intensive compliance monitoring than routine operations. Monitoring adjustments could also be made in response to noncompliance problems, site-specific conditions during construction (e.g., seasonal use by wildlife), and the skill level and behavior of the contractor crews and foreperson.

Typically compliance monitoring of construction activities would occur on a daily basis and sensitive environmental resource areas would be inspected on a regular basis to ensure protection. During construction, the compliance monitors would communicate with the project inspectors on a regular basis to discuss the status of the construction activities and significant near-term (e.g., 2-3 days) construction activities. The compliance monitors would have the authority to immediately halt a noncompliance activity that is damaging or has the potential to damage a sensitive environmental resource, or an activity that is not being performed to building and construction standards.

The compliance monitors would submit daily monitoring reports, including photo-documentation as appropriate, for each location visited on that day. Each activity monitored would be assigned a compliance level (described below) and documented in a weekly report. The daily and weekly reports would be compiled in weekly summary database and made readily available to relevant agencies, including BLM and permitting agencies (e.g., on a non-public applicant website).

The daily and weekly reports would include relevant monitoring information, including, but not limited to:

- Description of general type of activity (i.e., construction grading, operation, decommissioning) and specific activity (e.g., grading, vegetation removal, erosion control, etc.)
- Percent of activity complete (for construction and decommissioning) or some other metric agreed to by BLM
- Presence/absence of environmentally sensitive resources
- Compliance level, including:

- Communication: a communication report to document and track relevant meetings or discussions between the compliance monitor and agencies, applicant representatives, other monitors, inspectors, or contractor personnel.
- Acceptable: inspected area or activity is in compliance with project specifications and mitigation measures.
- Problem area: inspected area or activity that does not meet acceptable compliance with project specifications and mitigation measures, but is not yet in noncompliance. This level is intended to identify issues or conditions that could result in non-compliance or a serious violation without remediation or corrective action.
- Noncompliance: inspected area or activity that violates project specifications or other requirements, damages sensitive environmental resource(s), or places sensitive environmental resources, personal safety, or worker safety at unnecessary risk.
- Serious violation: inspected area or activity that is in noncompliance and causes or poses risks of substantial harm or threat to sensitive environmental resources or worker/public safety. This level requires immediate reporting of the violation and direct communication among the compliance manager, the BLM Compliance Manager, and the relevant applicant representative regarding the violation, corrective actions, and possible enforcement actions.

Monthly reports would be issued that summarize the activities conducted during the reporting periods and would include at minimum the following information:

- A summary of reports completed by compliance monitors by compliance level (e.g., number of communications, acceptable reports, etc.) during the prior month and cumulatively to date for the project
- A summary of the variances approved by the compliance manager and compliance monitors and the net affected acreage during the prior month and cumulatively to date for the project

The compliance monitoring contractor would make the monthly report readily available to relevant agencies, including BLM and permitting agencies (e.g., on a non-public applicant website).

Variances

Unforeseen and unavoidable situations often occur during project construction, operations or decommissioning activities that require changes or adjustments to project methods and/or mitigation measures. Examples of such changes include route realignments, extra workspace, changes to previously approved construction work areas, and discrepancies or inconsistencies in project materials. Such necessary changes

would be processed through variance requests submitted by the applicant to the BLM for review and approval or denial. In some cases, BLM may delegate authority over variances to the compliance monitoring contractor.

Typically three variance levels are used to process variance requests:

1. Level 1 Variances (Field Decisions): Site-specific, minor, performance-based changes to project specifications, construction methods, or mitigation measures that result in similar or better protection of sensitive environmental resources or better constructability. Level 1 variances could be reviewed and approved or denied in the field by compliance monitors. Examples of Level 1 variances include erosion control structure modifications and minor site-specific plan specifications such as relocating a spoil storage area or minor changes to project design necessitated by site restrictions. Level 1 variances could also be used to communicate agency-directed changes to mitigation measures.
2. Level 2 Variances: Project changes that exceed the field decision authority of the compliance monitor and require processing and approval by the BLM Compliance Manager. Level 2 variances typically would be required for project changes that would affect BLM-administered lands outside the previously approved work area, but within areas that were already surveyed for sensitive environmental resources. Level 2 variances would usually require review of additional documentation, correspondence, and records. Examples of Level 2 variances would include additional work space outside the previously approved work area, but within previously surveyed areas; use of existing access roads not previously approved for use and that are not considered a "like use" that could be approved under a Level 1 variance; and project plan modifications different from the approved Plan of Development.
3. Level 3 Variances: Project changes that would affect BLM-administered lands outside the previously approved work area, and which had not been surveyed for sensitive environmental resources and/or would change the function, structure, technology required, or other part of the approved project. Level 3 variances could require review of additional documentation (including site surveys for sensitive environmental resources), correspondence, and records. A Level 3 variance could also require an amendment to the ROW grant. A Level 3 variance would be signed by the BLM Authorized Officer or the BLM Compliance Manager.

Stop Work Authority

A key component of effective environmental compliance monitoring would be stop work authority. The BLM would have the authority to stop work if project activities deviate from the protection requirements for sensitive environmental resources or from the approved project activities authorized by the BLM ROW grant. BLM may delegate stop work authority

to the compliance monitoring contractor, compliance manager, or compliance monitor, as deemed appropriate by BLM. Any stop work order would be immediately followed by formal written temporary suspension from the BLM Compliance Manager or BLM Authorized Officer.

Preconstruction Meeting

The compliance monitoring contractor would ensure that BLM conducts a preconstruction meeting prior to issuance of any Notices to Proceed. During the preconstruction meeting, the BLM Compliance Manager would discuss the requirement of the ROD, the ROW grant, the Plan of Development, and any additional stipulations. The compliance manager and at least one compliance monitor would participate in the preconstruction meeting.

Compliance Training and Education

The compliance monitoring contractor would be responsible for training its staff (or generally the environmental inspection team) and the construction personnel prior to the start of construction, with relevant BLM staff participating in the environmental training program. The environmental training program would follow the preconstruction meeting (see *Preconstruction Meeting* above). The BLM Compliance Manager or compliance manager would be responsible for conveying the components of the ECCMP, including the protection measures, the daily activities of the compliance monitors, the chain of command, the variance process, conflict resolution, stop work authority, etc. In addition, the compliance monitoring contractor would also train compliance monitors in all project duties and tasks, as described above in *BLM Compliance Monitoring Contractor*.

II.3.1.3.4.4 Land Use Plan Monitoring

Under the BLM LUPA, the BLM would conduct land use plan monitoring, which includes both implementation and effectiveness monitoring. In BLM terminology, implementation monitoring is the process of tracking and documenting the implementation, or the progress toward implementation, of land use plan decisions. The effectiveness monitoring component is the process of collecting data and information as the plan is being implemented in order to determine whether or not desired outcomes are being met or whether progress is being made toward meeting them.

II.3.1.3.4.5 Validation Monitoring

The DRECP Adaptive Management Team would implement validation monitoring as part of MAMP implementation. Validation monitoring assesses the validity of management actions to sufficiently accomplish the objectives originally conceived; Validation monitoring would be conducted in conjunction with effectiveness monitoring. Validation monitoring is

analogous to the targeted studies described by Atkinson et al. (2004), which serve to increase the knowledge of the effectiveness of management techniques. Validation monitoring could include short-term pilot studies and experimental management treatments. Validation would be a mechanism for implementing technological advancements to assist resource management (e.g., the development of LIDAR to monitor resources remotely).

II.3.1.3.5 Adaptive Management Framework

Adaptive management, in concert with effectiveness monitoring, is a key component of the overall DRECP conservation strategy and is the foundation for much of the long-term management of resources. Adaptive management would allow the DRECP to remain dynamic over time and responsive to changing conditions. The DRECP adaptive management framework is designed to accommodate ongoing improvements in data collection and analysis and increased scientific information and knowledge, while providing flexibility to support new ideas. This framework relies upon high levels of partner cooperation and an effective governance structure. This section describes the DRECP adaptive management framework, and the methods and tools that the Adaptive Management Team would develop and implement for conservation actions using an adaptive management approach.

The DRECP Adaptive Management diagram in Exhibit II.3-6 illustrates how science and effectiveness monitoring (as described in Section II.3.1.3.4.2) would support the adaptive management framework for the DRECP.

The adaptive management framework would be established and implemented together with the monitoring component of the DRECP MAMP, as described in Section II.3.1.3.4. Section II.3.1.3.5.1 describes the planning elements of the adaptive management framework, which are critical to the decision-making process. Section II.3.1.3.5.2 describes the implementation elements of the adaptive management framework. Section II.3.1.3.5.3 describes the evaluation and review elements of the adaptive management framework.

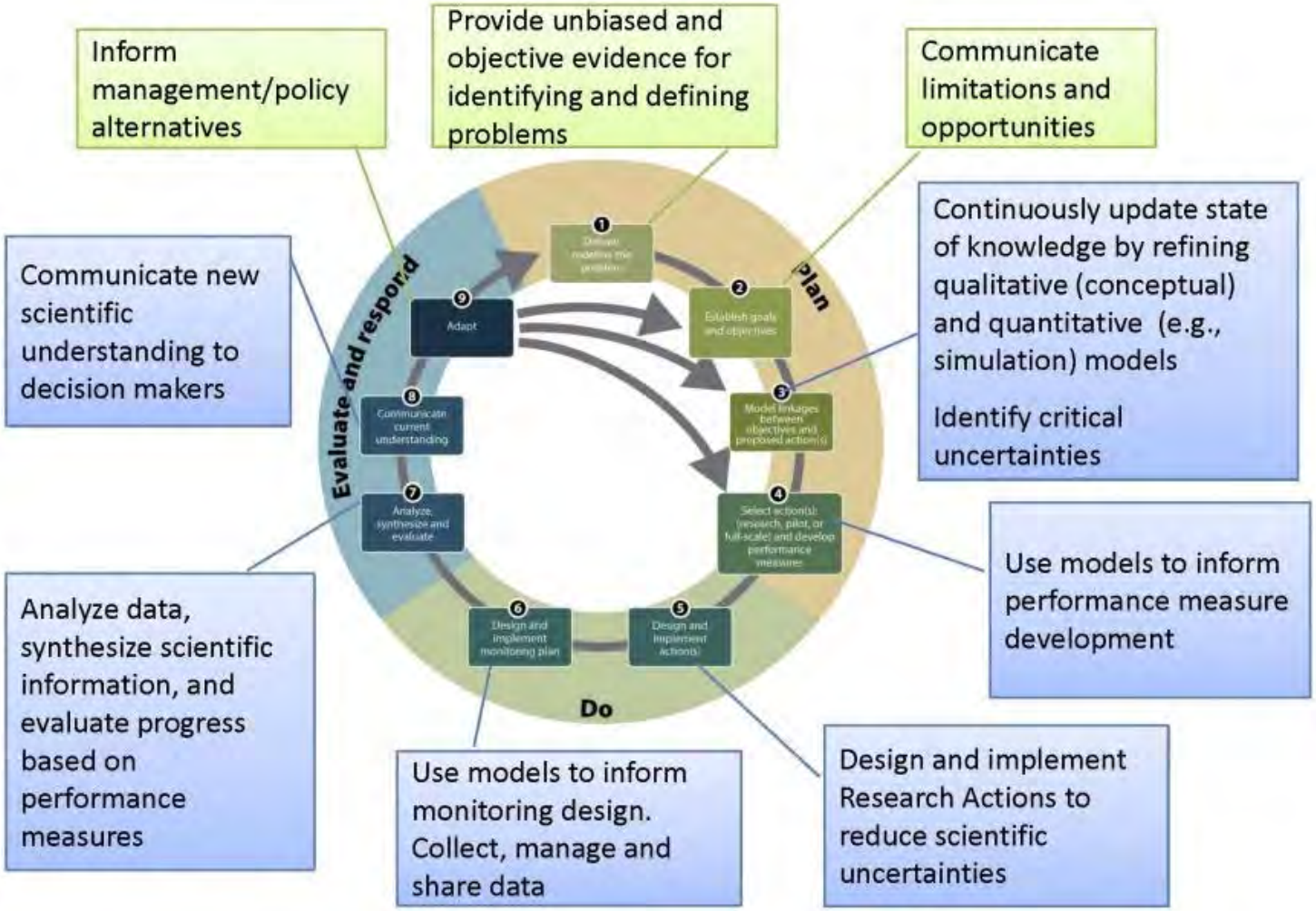


Exhibit II.3-6 The Adaptive Management Cycle of the DRECP Adaptive Management Framework

II.3.1.3.5.1 Adaptive Management Framework—Plan

The planning elements of the DRECP adaptive management framework include defining the problems, establishing the BGOs, developing models and other tools to link objectives to actions, and selecting actions.

Defining the Problems

Problem statements frame of the resource conservation issue for the purposes of adaptive management. Problem statements may be broad declarations regarding conservation for species across the Plan Area for the permit term or statements regarding specific threats and stressors that the adaptive management actions would be designed to address.

Problem statements would be generated by the Adaptive Management Team using current resource knowledge and information, models and other tools to understand the problems (as described further below), and monitoring observations of ecological processes, natural communities, and Covered Species throughout Plan implementation. During the early Plan implementation phases (within 5 years of Plan approval), in association with the scoping and prioritization of the effectiveness monitoring component of the MAMP (Section II.3.1.3.4.2), the Adaptive Management Team would develop the initial problem statements for the adaptive management framework, which would be iteratively refined as the program is implemented.

Biological Goals and Objectives

The Plan-wide BGOs provide the broad guiding principles and define the desired outcome of the conservation strategy. The Step-down Biological Objectives express the desired outcome of the conservation actions being implemented through adaptive management for the resources being conserved and managed, including landscape features and ecological processes, natural communities, and Covered Species.

The process for developing the BGOs is provided in Section I.3.4.3 and the draft set of DRECP BGOs are provided in Appendix C. The Adaptive Management Team would use the Step-down Biological Objectives to develop the scope of the effectiveness monitoring components of the MAMP (as described in Section II.3.1.3.4.2) and to identify effectiveness monitoring priorities during the early Plan implementation phase and throughout the long-term Plan implementation phase. Based on monitoring observations, the Adaptive Management Team would use the BGOs to guide selection and implementation of adaptive management actions to achieve the desired outcome.

Supporting Adaptive Management Through Models

Models, including conceptual (qualitative) and quantitative models, are cornerstones for adaptive management because they provide the means to generate testable hypotheses, explore alternative management actions, and test other assumptions. Models also help identify interactive effects of known or hypothesized important stressors and threats (e.g., wildfire and non-native species), effects of management actions (e.g., both positive and negative unintended consequences), and attendant uncertainties of model components and management outcomes. Understanding the interactive nature of the model components and outcomes, and reducing uncertainty in the model over time, is critical in the development of the effectiveness monitoring component of the MAMP.

The models summarized below would be used by the Adaptive Management Team to support MAMP decision-making. These models would be refined and other models likely would be developed through Plan implementation.

Management-Oriented Models

The Adaptive Management Team would employ management-oriented models as a key part of implementing conservation actions. Management-oriented models are widely employed in HCP (GCP) and NCCP programs to help guide implementation of conservation actions and to address uncertainties in the actions. As described in relation to the effectiveness monitoring framework in Section II.3.1.3.4.2, management-oriented models help summarize existing knowledge about the species, community or ecological system; help in selecting and prioritizing monitoring; and help identify uncertainties that are important for long-term resource management (Atkinson et al. 2004). They also lay the groundwork for developing hypotheses to be tested and analyzed in the adaptive management application of a conservation action. The ISA (2010) proposed that the DRECP have a monitoring framework that is explicitly hypothesis-based, with species monitoring performed within a context of community, landscape and ecosystem scale.

Various management-oriented models relevant to the DRECP have already been developed. Atkinson et al. (2004) describe several models that are directly relevant to DRECP, including an Aeolian sand natural community assemblage model of pressures on species and an Aeolian community sand process model. The USFWS has developed a management-oriented conceptual model for the desert tortoise (USFWS 2011). The ISA (2010) report included a management-oriented conceptual model for the Mojave fringe-toed lizard as an example of a model for a short-lived species with more volatile population dynamics than the desert tortoise. Most recently, the BLM Rapid Ecological Assessment Program has developed a number of models for both species and communities that occur in the Plan Area (http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach/reas/dataportal.html). Peer-reviewed conceptual models are available for desert bighorn, golden

eagle, mule deer, Bell's vireo, burrowing owl, and willow flycatcher. There also are existing models for several natural communities, including Sonoran palo verde mixed cacti desert scrub, Sonora-Mojave creosote bush-white bursage, and riparian vegetation.

As shown in Table II.3-16 in Section II.3.1.3.4.2, the Adaptive Management Team would develop management-oriented models in the Existing Information Assembly, Synthesis, and Prioritization element of the effectiveness monitoring framework, which would occur during the early Plan implementation phase (within 5 years of Plan approval). As appropriate, the Adaptive Management Team use existing models or refine the models for application to the DRECP MAMP.

Terrestrial Landscape Intactness Model

Terrestrial landscape intactness is a quantifiable estimate of "naturalness" according to the level of anthropogenic influence based on available spatial data. Intactness considers an assemblage of spatially explicit indicators (e.g., roads, development, agriculture, invasive species, and habitat fragmentation) that help define the relative condition of the natural landscape. Intactness modeling, has been largely applied to forested landscapes (Lee et al. 2003; Heilman et al. 2002; Strittholt et al. 2006; Potapov et al. 2008) but many of the same principles apply to any natural landscape, including desert ecosystems.

For the DRECP, a terrestrial intactness model was created at the 1 km^2 resolution for the purposes of creating a foundation against which the ecological condition of species' distributions, natural communities, and areas planned for renewable energy development can be quantitatively evaluated. The model uses 39 different spatial datasets arranged in a hierarchical logic tree controlled by a series of logic operators and weighting schemes (additional information on model development is available at www.databasin.org). The DRECP terrestrial landscape intactness model explicitly describes the current landscape in relative terms along a continuum between very high to very low intactness (see Exhibit II.3-7).

Using the baseline model results for comparison, the Adaptive Management Team may use the model to predict changes in terrestrial landscape intactness over time by incorporating proposed development (e.g., as projects are proposed for the DFAs) and management plans (e.g., restoration of a habitat linkage). It can also be used as a monitoring and reporting tool for tracking both positive and adverse changes in the landscape as they occur. Results of the terrestrial landscape intactness model can be used as a stand-alone product, but it becomes more powerful when it is incorporated with other datasets. For example, terrestrial landscape intactness can be intersected with the mapped distribution for each Covered Species or natural community, which allows for the creation of individual current status profiles for these environments.

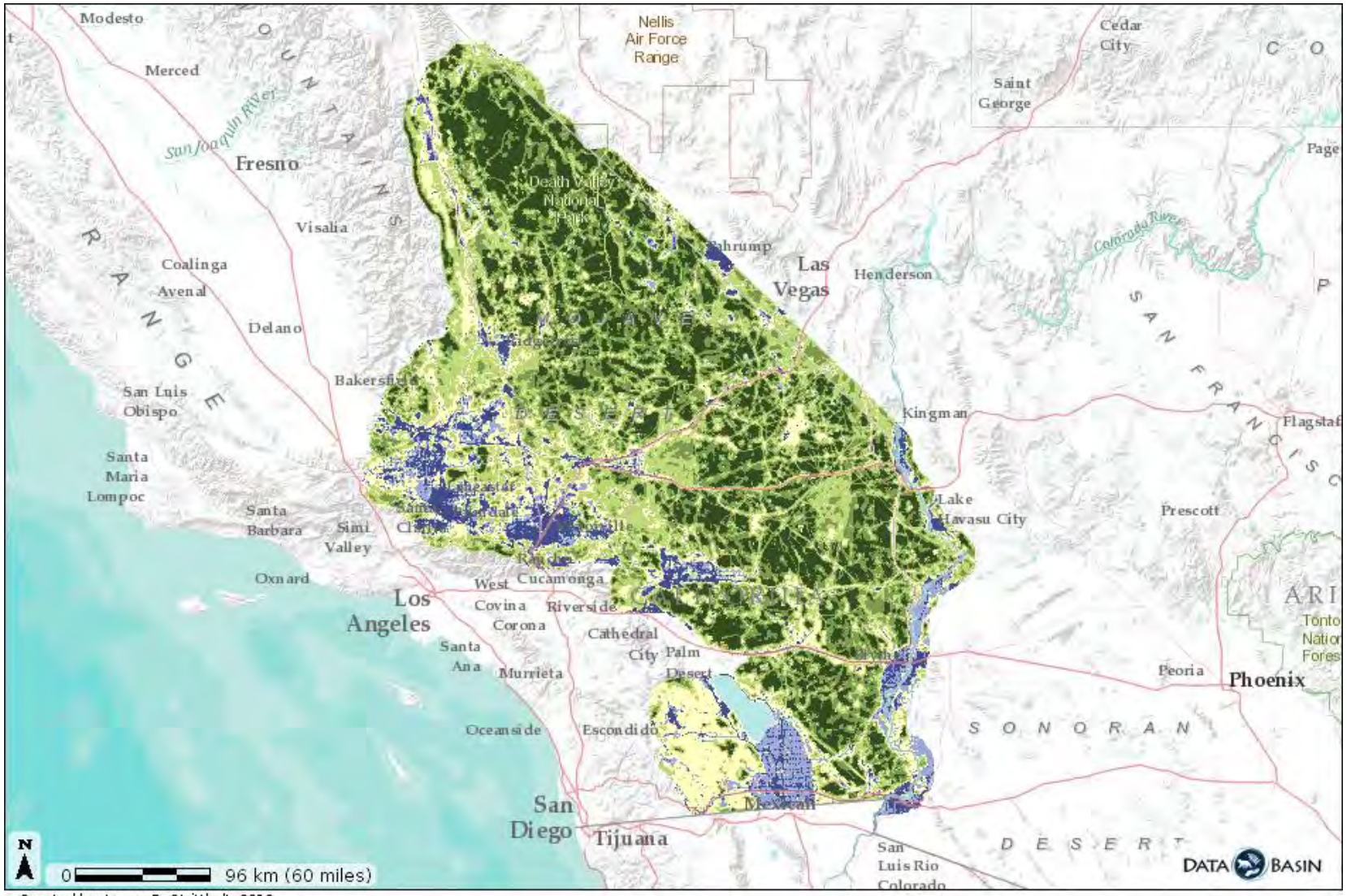


Exhibit II.3-7 Terrestrial Landscape Intactness in Six Classes from Very High (Relatively Undisturbed in Dark Green) to Very Low (Highly Disturbed from Agriculture, Resource Development, or Urbanization in Dark Blue)

Conservation Values Model

Logic modeling conceptually similar to the terrestrial landscape intactness model was also applied to modeling conservation values throughout the Plan Area (additional information on model development is available at www.databasin.org). This model was not developed to capture all possible conservation values in the Plan Area, but rather to emphasize the values articulated during the DRECP planning process that were of greatest importance and for which some spatial data exist. The biological themes aggregated in the conservation values model included natural community diversity, rare species concentrations, concentrations of Covered Species modeled distributions, concentrations of Non-Covered Species modeled distributions, and relative quality of identified wildlife linkages.

Climate Change Models

Managing resources in the Plan Area in the future will require that managers consider a range of environmental changes as possible futures that could substantially alter our current understanding of management needs for the desert ecosystem. Climate change is perhaps the most important of these issues because it has the potential to transform the desert environment in unprecedented ways. As reported by numerous researchers and supported by dozens of past- and next-generation climate models, the North American deserts are expected to become warmer at faster rates than other regions of the country (Stahlschmidt et al. 2011). The latest climate projections from various sources agree that temperatures will increase in the Southern California deserts between 2˚C and 5˚C (Stralberg et al. 2009; Snyder and Sloan 2005; Snyder et al. 2004; Bell et al. 2004). While there is widespread agreement on the direction of change in temperature into the next century, past and current climate models show less agreement with future precipitation projections. An overview of the climate change modeling tools is provided below and these models are described in detail in Appendix P.

<u>Climate Futures</u>

The most recent climate models (i.e., Canadian Earth System Model [CanESM2], Model for Interdisciplinary Research on Climate [MIROC5], and Community Climate System Model [CCSM4]), as described in Appendix P, were used to examine the potential vegetation response to changes in temperature and precipitation in the Mojave and Colorado/Sonoran Deserts. All three climate future models project changes in natural vegetation covers into the next century, as summarized by the following:

- The CanESM2 climate model, which is the wet extreme, projects a substantial decline in desert vegetation in favor of more grass, shrubs, and trees in the Mojave Desert, with shrubs becoming the dominant vegetation type late in the next century.

In the Colorado/Sonoran Desert desert and grasses remain dominant under the CanESM2 model, but grasses become far more pervasive than desert over time.

- In contrast, under the MIROC5 model, the driest of the three models, there is less variability overall in the Mojave Desert, with desert vegetation remaining fairly consistent with historical levels and a slow trend to more shrub covers. The Colorado/Sonoran Desert shows similar variability, with more grass at different periods (e.g., mid-century) followed by drier conditions favoring desert and barren cover types.
- The CCSM4 model, which projects annual precipitation levels similar to historical levels, show less variability in the Mojave Desert compared to historical levels, with less desert and barren land and more grasses. The Colorado/Sonoran Desert shows similar variability compared to historic conditions with much less desert overall replaced by more grass.

The different vegetation cover results of the three climate models demonstrate the current uncertainty regarding changing environmental conditions in the Plan Area over the next century. However, some generalizations can be drawn from the model results that provide insight into likely adaptive management responses in the DRECP reserve system. Notably, projected expansion of grasses somewhere in the DRECP region is common for all three models. With normal variability of moisture in both deserts, but especially in the Colorado/Sonoran Desert, the risk of fire during the drier periods following excessive fuel build-up periods could result in many more and/or intense fires. Increased fire events have the potential to contribute to invasions of exotic grasses such as cheatgrass (*Bromus tectorum*) in the Mojave Desert and buffelgrass (*Pennisetum ciliare*) and red brome (*Bromus madritensis* ssp. *rubens*) in the Colorado/Sonoran Desert, thus creating a positive feedback loop of increasing invasion by these exotic species over time. Under any likely future climate scenario, therefore, the adaptive management strategy would incorporate increased monitoring for invasive species accompanied by increased control measures compared to current conditions. The increased risk of fire frequency and/or intensity related to climate change will also be exacerbated by the increased chance of accidental and intentional fire ignitions in and around human development.

<u>Climate Refugia</u>

Climate refugia are areas where the effects of projected climate changes are mapped to be least severe or places on the landscape that contain physical features that would help mitigate the impacts of a changing climate. For example, microhabitats that contain greater proportions of prolonged shade (such as in narrow canyons) will not be subject to the same high temperatures as experienced in neighboring unshaded areas. Organisms located in refugia areas are expected to be buffered to a certain degree from projected climate

impacts. Information about climate refugia would not only be used to prioritize DRECP reserve system assembly, but also for long-term management of the reserve system habitats and microhabitats to ensure that refugia retain their function. Details of the climate refugia modeling are provided in Appendix P.

Climate Velocity

Climate velocity is an index of climate change representing a measure of how quickly climate variables such as temperature will change (Loarie et al. 2009). Generally, Loarie et al. (2009) report that temperature change velocities are lowest in mountainous biomes and highest in flooded grasslands, mangroves and deserts. Loarie et al. (2009) also state that "species survival may depend as much on keeping pace with moving climate as the climate's ultimate persistence."

Climate velocity provides a consistent way to express disparate measures of climate change, and a useful way of comparing them more directly. For instance, if climate velocity for both temperature and aridity is calculated, both results have units of velocity (distance over time), and they can then be directly compared to each other. Climate velocity is also a useful concept to help better understand the effects of climate change on species and on ecosystems: a particular value of climate velocity at the edge of an arid area might represent the speed at which that edge might advance. We can relate that to the speed at which different species can move to maintain a tolerable climate: birds can keep up with very fast climate change (though their habitats may not); tortoises have less ability; and grasses and trees have even less. Having such information will inform adaptive management of the DRECP. More detailed information on climate velocity modeling is provided in Appendix P.

Selecting Actions

Selecting actions to be implemented through adaptive management is the last planning element of the adaptive management process. Not all conservation actions identified to fulfill a management program's goals and objectives are appropriate for adaptive management. Williams et al. (2009, p. iv), for example, list the kinds of questions the Adaptive Management Team would pose to determine whether a conservation action meets the conditions necessary to implement the action through an adaptive management framework.

The Adaptive Management Team would review the Conservation and Management Actions (CMAs) developed for the DRECP Conservation Strategy, and which are fully described in Section II.3.1.2.5. These CMAs are summarized as:

- Avoidance and minimization actions related to renewable energy and transmission Covered Activities (Section II.3.1.2.5.1 through II.3.1.2.5.4 and Section II.3.1.2.5.6).

- Avoidance, minimization, and management actions in the reserve (Section II.3.1.2.5.5).
- In existing conservation areas (i.e., LLPAs and MEMLs), existing management regimes would remain in place. The Adaptive Management Team would coordinate conservation actions implemented under the DRECP with the appropriate entity managing the existing conservation areas.
- In BLM LUPA conservation designation lands, resources would be managed according the DRECP CMAs and according to the unit-specific management actions to maintain the vegetation, fish and wildlife, and other resource values within the NLCS/ACEC/Wildlife Allocation unit as described in the BLM special land allocation management plans (Appendix L). Additional conservation actions identified through MAMP implementation may also occur in these areas.
- In lands added to the reserve through Plan implementation, the DRECP CMAs would apply. Additional conservation actions identified through MAMP implementation may also occur in these areas.
- Compensation actions that describe how the reserve would be built through acquisition-based compensation and how non-acquisition compensation actions would be implemented in the reserve (Section II.3.1.2.5.7). Table H-10 in the CMA Documentation Appendix (Appendix H) provides a listing of eligible non-acquisition actions that could be used for compensation for Covered Species.

Based on the review the CMAs, the Adaptive Management Team would: (1) recommend to the Coordination Group which actions should be implemented under an adaptive management framework; (2) designate relative priority levels for the recommended actions (3) determine whether the action is to be implemented as research, pilot, or full implementation; (4) determine whether it is to be an active or passive form of adaptive management; (5) develop the specific adaptive management plan for the action; and (6) include the action in the draft annual work plan. Based on the Adaptive Management Team's recommendations, the Coordination Group would have ultimately responsibility for selecting the action(s) to be implemented based on permit conditions, the funding available, and the implementation status of the overall operating conservation program, including the principle that management actions should be commensurate with the level and location of development of Covered Activities permitted pursuant to DRECP.

II.3.1.3.5.2 Adaptive Management Framework—Implement

The implement or “Do” phase of the DRECP adaptive management framework include design and implementation of the actions and associated monitoring. As described in Section II.3.1.3.3.3, the Coordination Group would approve an annual work plan that will specify the conservation actions to be implemented in the coming year, including the

selected adaptive management actions recommended by the Adaptive Management Team. The Coordination Group would ensure that the approved adaptive management actions are implemented in a manner consistent with the MAMP.

II.3.1.3.5.3 Adaptive Management Framework—Evaluate and Respond

The evaluating and responding elements of the adaptive management framework are where feedback is provided and course adjustments are made, as needed, based on continued learning gained from feedback. The evaluating and responding phase includes the following components:

1. Analyze, synthesize, and evaluate;
2. Communicate current understanding; and
3. Adapt.

The Adaptive Management Team would analyze, synthesize, and evaluate information gathered through the effectiveness monitoring component of the MAMP (Section II.3.1.3.4.2). This evaluation process would be transparent and communicated through the (see Section II.3.1.3.6 on information management). Using this process, as determined necessary, conservation actions would be modified (i.e., "adapted") to better achieve the Step-Down Biological Objectives, as well as inform other aspects of the operating conservation program. Because effective management is adaptive, the MAMP presumes that certain changes in the operating conservation program will occur throughout the life of the DRECP. The MAMP therefore will need to retain the flexibility to be revised and refined as new information on the life history or ecology of Covered Species, and the effectiveness of conservation actions, including adaptive management, is obtained.

The functionality of the DRECP data portal and the various updateable maps and models discussed above, and particularly the reporting and analytical tools, are fundamental for supporting an effective adaptive management framework. The DRECP data portal will provide decision makers with a system that achieves many of the elements for a successful long-term operating conservation program – accessibility, transparency, scientifically defensible content, and high levels of usability.

The Adaptive Management Team will be a primary user of these tools, evaluating outcomes from implementation of conservation actions, considering outside formal and informal input, and drawing upon other information, to make recommendations where needed to revise management approaches. The Adaptive Management Team would make recommended changes to the Coordination Group, who would make final decisions on those recommendations. Based on the various inputs, the Adaptive Management Team may recommend changes to problem statements, objectives, management-oriented models,

conservation actions, or monitoring approaches. This process will be ongoing, and governed by the schedule developed by the Coordination Group.

II.3.1.3.6 Information Management

A key component of the DRECP MAMP is communication between the Adaptive Management Team, the Coordination Group, the Stakeholder Working Group, Supporting Entities, Partners Working Group, permitting agencies, other agencies involved in implementing the DRECP, and interested parties. A web-based portal would be used to disseminate information and support implementation of the adaptive management plan.

The DRECP data portal would fulfill the following requirements:

1. Easily accessible to users
2. Clearly present all content
3. Accommodate a diverse and robust monitoring strategy
4. Facilitate sharing and collaboration
5. Provide flexibility in how content is managed (including data security)
6. Support high levels of transparency
7. Provide useful tools and reporting functions

The DRECP data portal would be used for the following purposes:

- House and manage all pertinent spatial datasets (including all model results)
- Support non-spatial files (e.g., Word documents, Excel spreadsheets, PDFs, PowerPoint files, and small image files)
- Support inclusion of new spatial datasets and other content over time
- Provide users with the ability to create customized maps, support numerous collaboration functions
- Provide existing and future specialized analytical tools

II.3.1.3.7 Nonbiological Resources MAMP

As part of the DRECP, the BLM will implement the LUPA and CMAs for nonbiological resources, in addition to those specified for biological resources. As noted, regulations in 43 CFR 1610.4-9 require that land use plans establish intervals and standards for monitoring and evaluation based on the sensitivity of the resource decisions, with additional specificity in the BLM Land Use Planning Handbook (H-1601-1), Chapter V (BLM 2005).

The BLM would monitor and evaluate management strategies and resource conditions and trends to determine the effectiveness of the LUPA and CMAs and to ensure that its implementation is achieving the desired results. Information on resource conditions obtained through monitoring would be used to assess the effectiveness of management strategies and evaluate whether or not management should be adapted to accommodate new information, changes in demands on resources, or other considerations.

II.3.1.3.7.1 Land Use Plan Monitoring

Land use plan monitoring is conducted in two stages. The first is to track that decisions are implemented, or making progress towards implementation, in accordance with the approved plan and ROD. The BLM conducts this type of monitoring as plan decisions become effective or when decisions to approve implementation-level plans or to implement site-specific projects are approved or implemented.

The next stage of monitoring is to determine whether land use plan decisions are achieving the desired effects. Effectiveness monitoring provides an empirical database on impacts of decisions and effectiveness of mitigation. Effectiveness monitoring is also useful for improving analytical procedures for future impact analyses and for designing or improving mitigation and enhancement measures.

Effectiveness monitoring is the process of collecting data and information to determine whether desired outcomes (expressed as goals and objectives in the land use plan) are being met (or progress is being made toward meeting them) as the allowable uses and management actions are being implemented. The goals and objectives for all resources other than biological resources are presented in Section II.3.2.3.

A monitoring strategy must be developed as part of implementing the land use plan that identifies indicators of change, acceptable thresholds, methodologies, protocols, and timeframes that would be used to evaluate and determine whether or not desired outcomes are being achieved.

The following sections provide example monitoring strategies for cultural resources and tribal interests, recreation, and visual resources. These examples may be adjusted if needed during the life of the Plan. For other resources, the BLM would monitor all the LUPA decisions and CMAs and implement adaptive management as necessary.

II.3.1.3.7.2 Cultural Resources

Public Law 111-11 identified types of BLM-managed conservation lands to be designated as National Conservation Lands. The DRECP is a major planning effort to identify which lands meet the definition in Public Law 111-11 for inclusion as National Conservation

Lands. These lands were identified in part based on having nationally significant cultural values. As part of the DRECP, the BLM would monitor these lands and LUPA actions to ensure the purpose of the LUPA is met.

In addition to including lands with nationally significant cultural values as part of the National Conservation Lands, the BLM LUPA also provides CMAs for National Scenic and Historic Trails and for cultural resources and tribal interests. The BLM developed the National Scenic and Historic Trails CMAs under the Federal Land Policy and Management Act (FLPMA) of 1976 and the National Trails System Act. As part of this effort, the LUPA provides goals and objectives for both these resources. The CMAs are designed to achieve these goals and objectives.

The CMAs for National Scenic and Historic Trails would provide a management corridor width and establish land use authorizations that would avoid other uses in the corridors without mitigation or appropriate compensation. The CMAs would restrict uses that interfere with the nature and purpose of the trails.

The CMAs for cultural resources and tribal interests provide a method to identify and protect archaeological data, identify places with traditional cultural and religious importance to federally recognized Native Americans, and design BLM actions to minimize impacts to cultural resources, among others. The management of cultural resources on BLM land is done in compliance with multiple federal laws, see Section II.3.2.3.3. As noted in this section, the CMAs are developed and recommended by an appropriately staffed interdisciplinary team in accordance with policies described in the BLM Manual, Sections 8100 through 8170, and consistent with the statewide protocol with the California SHPO and other guidelines from the SHPO.

Monitoring the National Scenic and Historic Trails and cultural resources and tribal interests CMAs will allow the BLM to review whether the implementation of the CMAs meet the stated goals and objectives. Monitoring also provides an opportunity to revise and adapt the CMAs if necessary.

Avoiding and Minimizing Impacts to Cultural Resources and Tribal Interests

A number of CMAs were developed specifically to avoid or minimize impacts. The CMAs for the entire Plan Area, DFAs, Study Area Lands, and Transmission Corridors, as well as NLCS and ACEC lands all require identification of cultural resources prior to use of this land and includes taking the cultural resources sensitivity into consideration prior to selecting a renewable energy site. The BLM must ensure that actions and authorizations in the Plan Area are designed first to minimize impacts on cultural resources including places of traditional cultural and religious importance to federally recognized Native Americans.

The CMAs require all development to abide by the requirements established in Section 110, Section 106, and Section 304 of the National Historic Preservation Act and Section 9 of the Archaeological Resources Protection Act.

Monitoring

Because it is unlikely that all cultural resources and tribal interests would be completely avoided by actions permitted under the DRECP, monitoring the CMAs is an important step to ensure they are achieving the desired goals and objectives. Monitoring the CMAs is also important to ensure the NLCS and ACEC areas designated under the LUPA are protecting the resources for which they were established.

The BLM, in cooperation with appropriate agencies and others, would develop interpretive materials and design trainings to provide stewardship programs to protect cultural resources and tribal interests. In order to ensure these types of actions meet the goals and objectives of the CMAs, the BLM will need to monitor the effects. This requires establishing a baseline, monitoring the disturbance of archaeological sites, and monitoring natural and man-made threats to cultural resources that can be quantified such as erosion, looting, vandalism, grazing, and OHV use.

The baseline data would allow the BLM to clearly identify whether the CMAs are achieving their desired results and if they are not, adapt those actions. By continuously monitoring the CMAs, the BLM and its partners can identify standard protection measures and best management practices that can be used more widely throughout the Plan Area.

The CMAs also provide protection for cultural resources and tribal interests in areas where renewable energy and transmission would be built. The CMAs include a management fee to be paid to the BLM as partial mitigation for cumulative effects that could be used to develop regional research designs and other forms of off-site and compensatory mitigation. Monitoring the success of regional designs would also be necessary to ensure they are successful. As with all monitoring, this allows the BLM to adapt and revise the regional design if it does not achieve the desired results.

II.3.1.3.7.3 Recreation

The EIR/EIS identifies goals and objectives for the LUPA recreation decisions in Section II.3.2.3.8, as well as a comprehensive suite of required CMAs that would avoid and/or minimize adverse impacts to recreational resources either on site or through consultation and coordination with potentially affected entities. The recreational CMAs are extensive and include management actions for the Special Recreation Management Actions (SRMAs) and Extensive Recreation Management Areas (ERMAs) designated through the BLM LUPA including management for renewable energy projects.

The CMAs also provide for recreation opportunities in the NLCS lands, ACECS, and Wildlife Allocations such that these areas are potentially available for recreation even though their primary goals are not recreation but rather conservation. Monitoring the CMAs will allow the BLM to review whether the implementation of the CMAs meet the goals and objectives and provides an opportunity to revise and adapt the CMAs if necessary.

The Recreation and Visitor Services goals and objectives draw on the BLM California-specific Recreation and Visitor Services Strategy was completed in 2008 (BLM 2008b). This Strategy was designed to meet the specific needs and changing demands of recreation visitors and changes in BLM recreation management. It includes a number of actions that are folded into the DRECP goals and CMAs and that can and should be monitored. Examples include:

- Completing an inventory of the recreation setting characteristics.
- Administering the setting to maintain diversity across the spectrum of recreation experiences.
- Working with business, organized recreation groups, outfitters, communities, and interesting individuals to care for public lands.
- Planning and managing lands for sustainable recreation-tourism.
- Working to identify appropriate fees in collaboration with communities, local governments, the private sector, and other agency cooperators.
- Improving information regarding travel routes including Geographic Information System (GIS) mapping.
- Designing sustainable travel systems that meet recreationists needs.
- Developing facilities and resources through partnerships and expanding visitor education, among many others.

Avoiding and Minimizing Impacts to Recreation

The BLM developed a number of CMAs to avoid or minimize impacts of renewable development and also to encourage and enhance the designation of areas managed for recreation. Specifically the BLM is seeking to improve access to recreation opportunities, ensure a quality experience and enjoyment of natural, biological, and cultural resources, and provide for and receive fair value in recreation.

Because the LUPA would designate up to 2.7 million acres of SRMAs and up to 880,000 acres of ERMAs, avoiding and minimizing impacts to these lands is important to ensure that these designations meet their objectives. CMAs are designed to protect the SRMAs and ERMAs while retaining other appropriate use. To facilitate this, the BLM designed

mitigation measures that are part of the CMAs to reduce impacts to recreation setting characteristics identified in Field Office RMPs or activity plans. Monitoring these measures and adapting to the information would ensure the successful meeting of the recreation goals provided in the LUPA and CMAs.

Monitoring

In order to monitor recreation the BLM would need to establish key parameters of the CMAs that could be measured to review success. Such parameters could include monitoring the Plan Area to quantify the number of recreational visits, types of recreational activities and use patterns, accomplishment of management objectives, and potential adverse impacts to resources and visitor experiences from recreational use. Monitoring programs would need to include actions such as:

- Installing and monitoring vehicle counters to observe visitation levels.
- Monitoring campground use to gauge visitor use patterns.
- Observing and documenting use of elements such as wildlife guzzlers to observe wildlife use levels.
- Engaging wildlife viewer to survey migratory birds to assess bird populations and visitor enthusiasm.

The results of the monitoring would provide an opportunity to identify actions to protect resources, enhance visitor experiences, and deal with health and safety needs in the area. The BLM, and any other management partners, would need to engage the proposed SRMA visitors through visitor surveys to ascertain patterns, preferences, and demographics.

Monitoring would help the BLM to detect and document natural and human-induced changes in resource conditions and visitor experiences, and offer insights into the effectiveness of resource management policies and objectives. It would also help agency personnel understand what might be driving the changes requiring intervention (corrective management actions or strategies).

Based on the information gathered, the BLM would be able to ensure the CMAs were successful or adapt them if necessary to meet the ultimate recreation goals and planning criteria.

II.3.1.3.7.4 Visual Resources

The DRECP EIR/EIS identifies a comprehensive suite of required CMAs developed to avoid, minimize, and/or mitigate adverse impacts on visual resources, see Section II.3.2.3.10. The Visual Resource CMAs are extensive, and incorporate state-of-the-art BMPs that have been

developed by BLM specifically for renewable energy development in the context of the Energy Policy Act of 2005, the FLPMA, and the BLM's Visual Resource Management (VRM) System.

Avoiding and Minimizing Visual Impacts

A number of CMAs were developed specifically to avoid or minimize impacts. A fundamental example is the CMA requiring project proponents to demonstrate and ensure that development (including transmission facilities) within each of the VRM Class polygons meets the management objectives of that VRM Class, as measured through a visual contrast rating process.

Other CMAs would avoid or minimize impacts by assigning VRM Classes to DFAs and to certain visually sensitive lands. Examples include:

- Managing all DFAs as VRM Class IV
- Managing all Variance Lands as VRM Class III
- Managing all NSHT Corridors, and Lands managed for Wilderness Characteristics as VRM Class II
- Managing all Wilderness and Wilderness Study Areas (WSAs) as VRM Class I (as per current BLM Policy.)

Importantly, the CMAs for Visual Resource Management require all development, whether within or outside of DFAs, to abide by the BMPs addressed in the BLM's *Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*. Included are BMPs specific to wind, solar or geothermal energy development, as well as those for the design, construction, operation, and decommissioning activities common elements, detailed under the following categories:

- Visual impact analysis and mitigation planning
- Facility siting and design
- Structure design and materials selection
- Materials surface treatments
- Lighting design and operation
- Avoiding unnecessary disturbance
- Soil management and erosion control
- Vegetation management
- Interim and long-term reclamation
- "Good housekeeping" practices

The BLM designed the BMPs to be highly effective and neither expensive nor difficult to implement, particularly if incorporated early in the development process. Examples include successful revegetation, recontouring to match existing terrain characteristics, or painting facility components to blend with the landscape background.

Mitigation compensation requirements of CMAs include reclamation of visual impacts on off-site lands at various ratios, based upon the Visual Resource Inventory (VRI) Class of the project-impacted area. Additional mitigation may be required where projects affect viewsheds of specially designated areas (e.g., NSHT, National Parks, etc.)

Monitoring

One critically important element of the BMPs is the requirement for development and implementation of a Visual Resource Impact Monitoring and Mitigation Compliance Plan. This plan is a detailed, project-specific document that would be prepared and submitted for approval at the onset of the project planning process, prior to project approval, to serve as a guide to siting and design. This allows the BLM to review and respond to the plan prior to approving the project and to establish a baseline from which to monitor.

Visual design objectives within the Monitoring and Mitigation Compliance Plan would be measurable and monitored during construction, operations, and decommissioning. The Compliance Plan would include monitoring and compliance elements that establish the requirements and thresholds for acceptable performance, and measures for corrective actions. The visual contrast rating procedures would be included for field-based compliance assessment during operations and after decommissioning to gauge compliance with the project's visual impact mitigation requirements.

Provisions for monitoring the effectiveness of the visual impact mitigation strategy would be included to ensure developers implement required visual impact CMAs and to measure their effectiveness.

By requiring the preparation, submittal, and approval of a Visual Resource Impact Monitoring and Mitigation Compliance Plan, the BLM would ensure that the DRECP CMAs for Visual Resources have been incorporated into various aspects of a proposed project prior to construction. Monitoring of compliance with the plan during construction, operation, and decommissioning would require the BLM to assign personnel to monitor and report on project compliance (or to require project proponents to provide monitors). This would require not only qualified personnel (trained in Visual Resource Management), but also a database for reporting and tracking compliance, and a reporting protocol. Visual resources compliance could be tied to permit or lease renewals, regularly scheduled inspections, spot checks, and various other means to ensure compliance and accountability.

II.3.1.4 Overview Description of Covered Activities

This section provides a description of the distribution, magnitude, and scope of activities associated with renewable energy generation, transmission, and conservation activities for the Preferred Alternative under the DRECP. This describes how the Preferred Alternative would meet the renewable energy goals outlined in Section I.3.5.

Covered Activities include renewable energy development and transmission projects, and conservation activities as described and analyzed in the DRECP, that would be considered for incidental take permits under Section 2835 of the state NCCPA and/or Section 10 of the ESA, for otherwise lawful activities. Covered renewable energy development includes geothermal, solar thermal, photovoltaic (PV) solar, wind development and transmission. On nonfederal lands, renewable energy and transmission siting, construction, operation, and decommissioning activities and conservation activities would be considered Covered Activities for incidental take permits under Section 2835 of the state NCCPA and/or Section 10 of the federal ESA. On BLM-administered lands, the BLM LUPA and the NCCP address renewable energy and transmission siting, construction, operation, and decommissioning activities, and conservation activities, and BLM LUPA also addresses other land use management decisions on BLM-administered lands. The following describes the renewable energy generation, transmission, and conservation related activities that would occur on both federal and nonfederal lands. The specific land use management decisions addressed by the BLM LUPA are described in Section II.3.2.

The section includes a summary of DFA distribution, and is then subdivided by technology: solar, wind, geothermal, and transmission. Each technology section contains a description of the technology, the activities associated with siting, constructing, operating, and decommissioning the technology, and an estimated acreage associated with these activities.

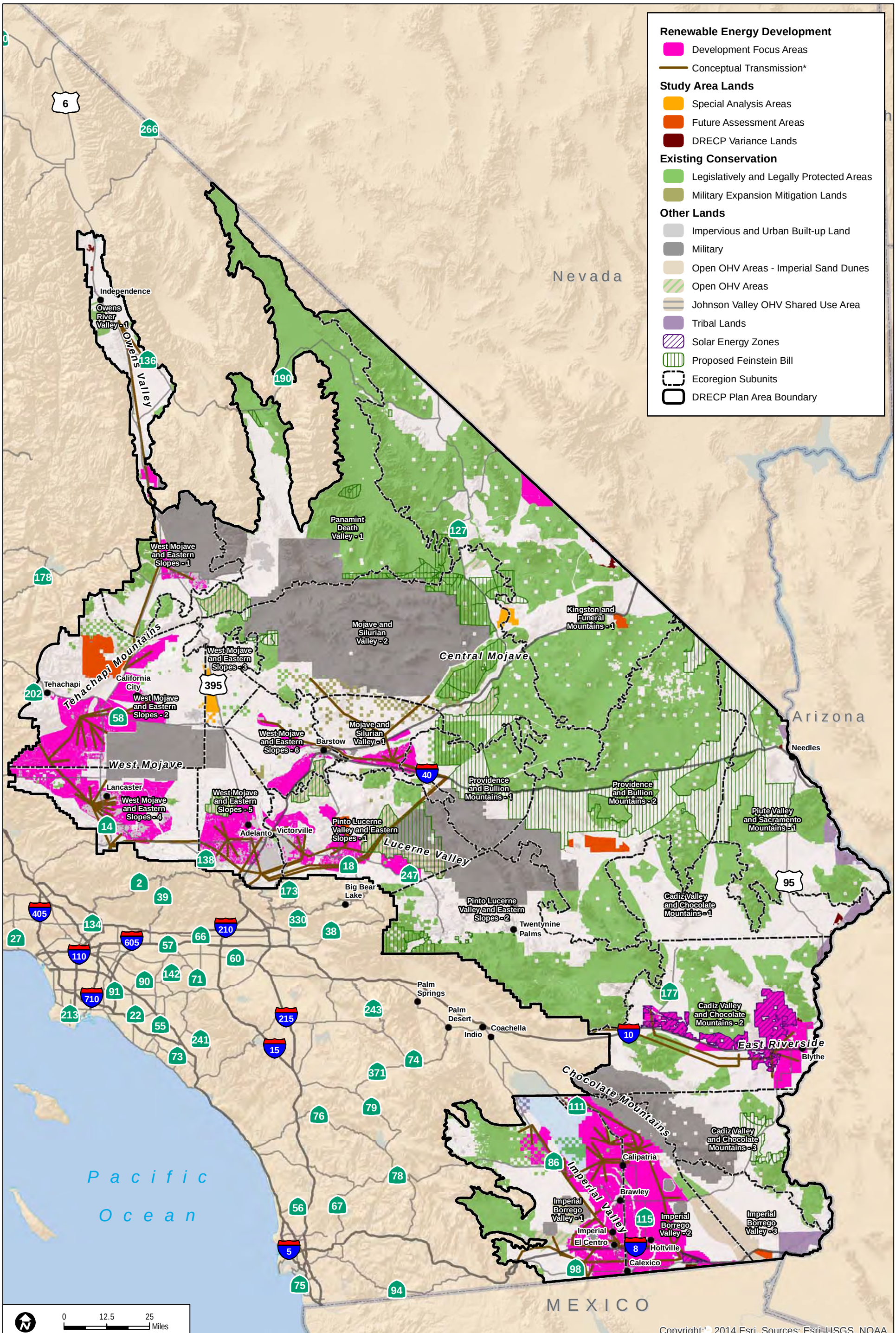
In the Preferred Alternative, renewable energy-related activities covered by the Plan would be confined to DFAs. If the activities are not sited within a DFA, they would no longer be considered a Covered Activity and would not enjoy the benefits the Plan affords. Generation development is focused in the West Mojave, Imperial Valley, East Riverside and around Barstow, with smaller areas in the Owens Valley and on the Nevada border. Figure II.3-3 shows the DFAs for the Preferred Alternative and Appendix G provides figures of the DFAs for each ecoregion subarea in the Plan Area.

Table II.3-18 provides a DFA acreage summary by ecoregion subarea and by ecoregion subunit (i.e., finer-grained geographic subdivisions within each ecoregion subarea). Figure II.3-3 shows the corresponding ecoregion subunits.

Table II.3-18
Preferred Alternative Development Focus Areas by Ecoregion Subarea and Subunit

Ecoregion Subarea	Ecoregion Subunit	DFA Acreage
Cadiz Valley and Chocolate Mountains	Cadiz - 1	—
	Cadiz - 2	267,000
	Cadiz - 3	<1000
Imperial Borrego Valley	Imperial - 1	344,000
	Imperial - 2	389,000
	Imperial - 3	—
Kingston and Funeral Mountains	Kingston - 1	30,000
Mojave and Silurian Valley	Mojave - 1	42,000
	Mohave - 2	—
Owens River Valley	Owens -1	15,000
Panamint Death Valley	Panamint - 1	—
Pinto Lucerne Valley and Eastern Slopes	Pinto - 1	152,000
	Pinto - 2	—
Piute Valley and Sacramento Mountains	Piute - 1	—
Providence and Bullion Mountains	Providence - 1	16,000
	Providence - 2	—
West Mojave and Eastern Slopes	West Mojave - 1	23,000
	West Mojave - 2	338,000
	West Mojave - 3	—
	West Mojave - 4	217,000
	West Mojave - 5	127,000
	West Mojave - 6	62,000
	Total DFA Acreage	**2,024,000**

Notes: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.



Sources: ESRI (2014); CEC (2013); BLM (2013); CDFW (2013); USFWS (2013)

*Transmission lines shown are based on the DRECP Transmission Technical Group (TTG) Report, which provides a conceptual transmission plan for the DRECP alternatives and is not intended for siting or alignment purposes.

FIGURE II.3-3

Preferred Alternative - Plan-wide DFAs

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The distribution of different generation technologies varies depends on underlying factors that affect each technology. The method used to estimate the distribution of generation impacts across the Plan Area simultaneously accounts for the area available to each technology, potential interactions between technologies, and variation in the relative development potential of different DFAs. A more detailed description of the methodology is discussed in Chapter I.3 with additional detail provided in Appendix F. In the following section, each technology is discussed separately.

Table II.3-19a includes a summary of the DFAs by county by technology type. The technology type listed indicates what technologies are assumed feasible in the DFA. If multiple technologies are listed that indicates that more than one renewable energy technology could be feasible in that DFA. DFAs suitable for solar only are the most common in most counties. DFAs suitable for solar and wind are most common in Riverside and San Bernardino counties. Geothermal is only proposed in Imperial and Inyo counties under the Preferred Alternative. Table II.3-19b includes a summary of the DFAs by ownership class. For the Preferred Alternative, over 80% of the DFAs are on nonfederal lands and nearly 20% of the DFAs are on federal lands.

Table II.3-19a
Preferred Alternative Development Focus Areas by County by Technology Type

Technology Type Category by County	DFA Acreage
Imperial	**734,000**
Geothermal	114,000
Solar	364,000
Solar and geothermal	226,000
Solar and wind	25,000
Solar, wind, and geothermal	5,000
Wind	400
Wind and geothermal	40
Inyo	**45,000**
Geothermal	8,000
Solar	31,000
Solar and geothermal	6,000
Kern	**360,000**
Solar	172,000
Solar and wind	132,000
Wind	55,000

Table II.3-19a
Preferred Alternative Development Focus Areas by County by Technology Type

Technology Type Category by County	DFA Acreage
Los Angeles	**218,000**
Solar	218,000
Riverside	**268,000**
Solar	121,000
Solar and wind	144,000
Wind	4,000
San Bernardino	**399,000**
Solar	154,000
Solar and wind	210,000
Wind	36,000
San Diego	—
Total	**2,024,000**

Notes: See Chapter I.3 and Appendix F for detailed descriptions of the methodology used to identify the acreage amounts listed in this table. The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table II.3-19b
Preferred Alternative Development Focus Areas by Ownership Class

Ownership Class	DFA Acreage
Federal Lands	
BLM-administered lands	367,000
Other federal lands	25,000
Nonfederal Lands	
Private lands	1,569,000
State and local public lands	64,000
Total	**2,024,000**

Notes: See Chapter I.3 and Appendix F for detailed descriptions of the methodology used to identify the acreage amounts listed in this table. The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

The following sections describe the distribution of the DFAs along with an estimate of the total project area required for each technology (i.e., the estimated summation of all potential projects that could be constructed for each technology type) and the associated area of permanent disturbance, a summary of which is provided in Table II.3-20. For each technology type, impacts would vary among individual projects, but to enable a meaningful programmatic analysis, typical values were estimated for different activities based on recently constructed renewable energy projects and extrapolated to the potential future distribution of generation across the Plan Area. Where feasible, the areal extent ("footprint") of an activity was quantified and its contribution to the overall impacts was defined. Where it was infeasible to quantify the footprint of an activity, a qualitative description is provided.

Table II.3-20
Summary of Permanent Disturbance and Project Area for All Renewable Generation Technologies

Technology	Estimated Permanent Disturbance (Acres)	Total Project Area (Acres)
Solar	103,000	103,000
Wind	9,000	162,000
Geothermal	17,000	17,000
Ground-mounted distributed generation	15,000	15,000
Total	**144,000**	**297,000**

Notes: See Chapter I.3 and Appendix F for detailed descriptions of the methodology used to identify the acreage amounts listed in this table. The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

II.3.1.4.1 Solar Energy Generation (Including Utility-Scale Distributed Generation)[2]

This section describes the various solar energy generation technologies in operation today, including some of the specific characteristics of projects based on current technology and design. However, future advances in technology may affect the design of facilities within the timeframe of the DRECP. Therefore, the following descriptions are limited to the features used on current solar facilities. Future designs may deviate from the specific

[2] For the purpose of analysis, all distributed generation was considered to be located in the same areas as utility-scale solar; therefore requiring the same ancillary facilities (i.e., covered activities) as utility-scale solar projects.

descriptions described here, and depending on the level of increased impacts associated with such future designs, may not be eligible for coverage under the DRECP.

Solar power facilities convert sunlight into electricity, either directly using photovoltaic (PV) technology, or indirectly with concentrated solar power (CSP). CSP focuses the sun's energy to heat a working fluid, such as heat transfer fluid, hydrogen, or water, which is then used to drive turbines or engines to produce electricity.

Features that are common to all solar projects include ancillary facilities, such as operation and maintenance buildings that may be used for storage and maintenance purposes. All solar projects would require access roads for construction, routine maintenance, and operations. Within a project site, maintenance roads would be required to provide access for washing and maintenance of the solar fields. In addition, on-site energy storage may also be included within the design of the solar projects. Large-scale electrical power storage technology is in developmental stages at present, but would likely be part of future projects.

Solar Thermal

Solar thermal plants consist of two major subsystems: a collector system that collects solar energy and converts it to heat, and a power block that converts heat energy to electricity. CSP power plants produce electricity by collecting the sun's energy to generate heat using various mirror or lens configurations. The technologies discussed include:

- Parabolic trough
- Parabolic dish
- Power tower
- Compact Linear Fresnel Reflector

For solar thermal electric systems, the heat is transferred to a turbine or engine for power generation.

All CSP systems make use of the direct normal insolation component of solar radiation, that is, the radiation that comes directly from the sun. While the collection systems vary among the types of solar thermal facilities described below, the power block facility is common to all facilities. A power block facility typically includes an electrical building, auxiliary boilers, an air emission control system for the combustion of natural gas or propane in the auxiliary boilers, a steam turbine generator, a cooling tower, water treatment equipment, a hazardous materials storage area, petroleum-based fuel storage and delivery system, auxiliary equipment (emergency diesel generator, diesel fire pump, etc.), and water storage tanks. The acreage requirement for all solar thermal systems is 7.1 acres of per megawatt

(MW), with reported mean capacity factors of 43.3% and a reported range of values from 22 to 65%.

Parabolic Trough Solar Thermal Systems. Parabolic trough systems concentrate direct normal insolation using single-axis tracking, parabolic curved, trough-shaped reflectors onto a receiver pipe or heat collection element located at the focal line of the parabolic surface. A high temperature heat transfer fluid picks up the thermal energy in the heat collection element. Heat in the heat collection element is then used to make steam in the steam generator. The steam drives a conventional steam-Rankine power cycle to generate electricity. A collector field typically contains many parallel rows of troughs connected in series. Rows are typically placed on a north–south axis, allowing the single-axis troughs to track the sun from east–west during the day.

Parabolic Dish-Engine Systems. A solar parabolic dish-engine system comprises a solar concentrator (or "parabolic dish") and the power conversion unit. The concentrator consists of mirror facets that combine to form a parabolic dish. The dish redirects direct normal insolation to a receiver mounted on a boom at the dish's focal point. The system uses a two-axis tracker such that it points at the sun continuously.

The power conversion unit includes the thermal receiver and the engine-generator. In the solar receiver, radiant solar energy is converted to heat in a closed hydrogen loop, driving the Stirling engine-generator. Power conversion units are air-cooled.

Power Tower Systems. A power tower uses thousands of sun-tracking mirrors called heliostats to redirect direct normal insolation to a receiver at the top of a tower. Heliostats are placed around the power tower, directing solar radiation towards the power tower. The heliostats are connected with communication cables between each heliostat that are utilized to transmit signals from a computer that ensures the heliostats are moved throughout the day to track the movement of the sun across the sky. A solar power tower is located within the center of the heliostats and is utilized to capture the solar radiation being reflected off the heliostats. The receiver at the top of the tower either generates steam directly, or heats a molten nitrate salt heat transfer fluid to generate steam. The steam is used in a conventional turbine generator to produce electricity.

Compact Linear Fresnel Reflector. The compact linear fresnel reflector is a solar thermal technology in which rows of mirrors focus sunlight onto a fixed absorber located at a common focal point of the reflectors. Compact linear fresnel reflector solar systems alternate the inclination of the mirrors to focus solar energy on multiple absorbers. The compact linear fresnel reflector is similar to the more common solar parabolic trough systems in that it uses one-axis tracking to focus solar radiation on a linear receiver.

Solar Photovoltaic

Solar PV converts sunlight (also known as insolation) directly into electricity. The power produced depends on the material involved and the intensity of the solar radiation incident on the cell. Single or polycrystalline silicon cells are most widely used today. Single crystal cells are manufactured by growing single crystal ingots, which are sliced into thin cell-size material. Thin film solar cells are made from layers of semiconductor materials only a few micrometers thick. These materials make applications more flexible, as thin film PV can be integrated into roofing tiles or windows. Thin film cells significantly reduce cost per unit area, but also result in lower efficiency cells. Gallium arsenide cells are among the most efficient solar cells and have other technical advantages, but they are also more costly and typically are used only where high efficiency is required even at a high cost, such as space applications or in concentrating PV applications. Additional advanced technologies are under development including dye sensitized solar cells and organic light emitting diodes.

Concentrating Solar Photovoltaic Systems. Concentrating photovoltaic (CPV) plants provide power by focusing solar radiation onto a PV module, which converts the radiation directly to electricity. Either mirrors or lenses can be used to concentrate the solar energy for a CPV system. Most CPV systems use two-axis tracking to achieve point focus images on PV cells. The acreage requirement for PV systems is 7.1 acres per MW, with reported mean capacity factors of 43.3% and a reported range of from 15.5% to 28%.

Ground-Mounted Distributed Generation

Ground-mounted distributed generation is not a specific type of technology, but could include any of the above technologies. Ground-mounted distributed generation is a classification of generation defined by the limited size of the projects and the likely distribution of projects. For the purpose of analysis, ground-mounted distributed generation was considered to be projects of 20 MWs, occupying 142 acres that would be sited on disturbed and agricultural land. The acreage requirement for ground-mounted distributed generation systems is 7.1 acres per MW, with reported mean capacity factors of 43.3% and a reported range of from 15.5% to 28%.

Activities Associated with Solar Energy Generation

This section describes the activities associated with solar projects that would be covered by the Plan. Both construction and operational activities are described in Table II.3-21 and individual activities are quantified by acreage where feasible. It is not feasible to quantify all activities as the impacts may be too site-specific (i.e., dependent on a particular geographic location); where this is the case, a general description of the activity is provided.

Table II.3-21
Description of Activities Associated with Solar Energy Generation

Activity	Description
Pre-Construction and Construction Activities	
Geotechnical borings	Full geotechnical testing to establish the suitability of the site for construction would vary depending on the size and technology.
Installation of temporary meteorological stations	Meteorological towers would be installed across a potential site to assess the generation potential. The number of towers is typically dependent upon the size of the project terrain although typically there may be 2–4 towers on each site.
Temporary access routes and staging areas for meteorological towers and geotechnical borings	Temporary vehicular access to undertake pre-construction activity may result in unusual vehicular disturbance off existing routes, and require the use of established tracks and roadways where possible.
Site reconnaissance (including species-specific surveys)	Site surveys would be required prior to any permitting or construction activities. Activities would be required to utilize existing roads, tracks, and access.
Access roads/spur roads (permanent and temporary)	Off-site road construction or improvements may be required if local roads necessary for site access are not designed for gross vehicle weights of up to 80,000 lb (36,000 kg), the federal limit for tractor-trailer trucks on most U.S. highways. State-specific and local limits may also apply. Contact with local transportation authorities would be made to assure proper signage is placed to notify the public of traffic hazards. Generally, a primary road would be required to access a site that is sufficiently large to accommodate a large daily construction workforce and delivery traffic. Such an access road would reach as far as parking areas (paved or non-paved) for construction workers, laydown areas for equipment and supplies, or other major site locations. Roads leading to the facility would be constructed to federal and state standards and would typically consist of a 20 foot wide two lane road with graded 5-foot shoulders as recommended for average daily traffic volumes greater than 400 vehicles (AASHTO 1994) for an overall road width of 30 feet. If access road construction were required, the construction ROW width would likely be less than 60 feet, corresponding to a two-lane highway with 12-foot lanes and 3-foot shoulders. A 60-foot ROW would result in a disturbed area of about 7 acres per mile of road constructed. On-site access roads would be required to access facilities and generation arrays. Construction of permanent roads within the boundary of the facility would mostly consist of compacted gravel. For the purpose of estimating disturbance, impacts of roads within a solar project boundary are assumed to be part of the generation facilities.

Table II.3-21
Description of Activities Associated with Solar Energy Generation

Activity	Description
Ground-disturbance activities (including grading and clearing vegetation)	Solar facilities generally require relatively flat sites, and show varying degrees of sensitivity to gradient depending on technology. Heavy equipment that may be used in the site preparation phase would include bulldozers, graders, excavators, scrapers, front-end loaders, trucks, cranes, rock drills, chain saws, chippers, trenching machines, and equipment for blasting operations if required. Vegetation clearance and site grading is assumed across the entirety of the area required for generation facilities (solar arrays, troughs mirrors towers, etc.). The site may be partially re-vegetated but cannot be considered fully restored while operational. Impacts to the entire site within, the perimeter boundary are considered permanent.
Site preparation (e.g., excavation for foundations)	The size of foundations for generation facilities would be dependent on wind shear, and consequently foundations may be installed at various depths. For tower-based CSP technologies wind loading and the structure weight of towers, and the weight and vibration of steam turbines, dictate more robust foundations that would typically require excavations to 30–45-foot depths, depending on existing subsurface conditions. Other solar technologies such as PV and solar trough require foundations at grade level. Permanent buildings, including operation and maintenance buildings, would typically require a concrete-on-slab foundation at grade level. Transmission switchyards typically have drilled pier, mat, and pad type foundations that are installed with a grounding grid, before being backfilled to grades.
Operations and maintenance buildings, and general facilities	Permanent operations and maintenance buildings, including control rooms, would be constructed utilizing standard building and construction techniques. Ancillary facilities are assumed to include parking and equipment storage facilities and would typically occupy 5–10 acres**.**
Clearing, staging, parking, construction trailer, and equipment and material storage areas	Temporary construction areas, including laydown yards, on-site construction trailers, and material storage would require clearing and grading and are assumed to be occupy 40–50 acres per project. For analysis purposes temporary construction facilities are assumed to occupy 40–50 acres per project situated within the footprint of the

Table II.3-21
Description of Activities Associated with Solar Energy Generation

Activity	Description
	final development. Therefore, no additional acreage beyond that of the final long-term project footprint is assumed for solar facilities.
Evaporation ponds	Evaporation ponds may be required as part of cooling structures for solar thermal projects. They are often lined with clay or plastic to enable water retention. These facilities would be designed to deter use by birds and bats.
Fencing (temporary and permanent, for both wildlife and security)	Temporary security fencing around laydown yards, on-site construction trailers, material storage, and on site cement batch plants would be required. Permanent security fencing may surround the perimeter of the site; however, site permeability must also be considered in site design and used unless operationally infeasible.
Temporary drainage and erosion control (e.g., diversion channels, retention/detention basins, silt fences, erosion fabrics)	Temporary drainage and erosion control may be required at laydown yards and temporary sites, and would be determined on a project specific basis to comply with county, state, and federal requirements.
Permanent drainage: conveyance or semi-natural	Culverts and drainage modification may be necessary to divert and control runoff. Drainage systems would be constructed to federal and state standards. Permanent drainage management systems would be designed seek to minimize the disruption to natural flow. Further, the design would minimize areas of direct vegetation removal, grading, re-routing, and leveling; and minimize the amount of active stormwater management using re-routed or man-made channels, ponds and culverts.
Flood control structures	Temporary flood control may be required at laydown yards and temporary sites including temporary roads, and would be determined on a project specific basis.
Installation of utility services	Utility services would be required for operation and maintenance buildings. Installation may include trenching and backfilling activities, and would use established ROW. Utility services include: • Electric distribution lines, facilities, and interconnects • Natural gas lines • Sewage facilities/pipelines • Telecommunication lines and facilities • Trash collection and disposal • Water wells or municipal water supply and pipelines

Table II.3-21
Description of Activities Associated with Solar Energy Generation

Activity	Description
Meteorological stations	Permanent meteorological stations are assumed to be up to 265 feet tall, self-supporting monopole structures with an assumed permanent disturbance footprint of 0.02 acre.
Transmission collector lines	Transmission collector lines for a solar facility are typically trenched 48 inches below grade. Where collector systems run overhead, they may be strung on steel or wood monopoles 60–80 feet high.
Generator tie line (gen-ties)	Generator tie-lines are sole-use facilities constructed by an electric generator to interconnect and transmit its power to the electric grid. Depending on the size of the generation facility and the substation to which the facility is being connected, these lines can be between 69 and 500 kilovolts (kV). For 69 kV lines, conductors are typically installed on 68–120-foot tall steel or wood monopole structures. Higher voltages can be installed on either monopole or lattice steel structure of up to 160 feet tall. Generator tie lines are described as part of transmission impacts because of the possibility that impacts may occur outside DFAs.
Operation and Maintenance Activities	
Steam turbine and generation operations (solar thermal including power towers and parabolic trough systems)	Solar thermal plant operations may require substantial amounts of water for steam generation, cooling, and other industrial processes. Systems can be wet cooled, hybrid, or dry cooled, which would use up to 14.5 AFY/MW, 2.9 AFY/MW, or 1.0 AFY/MW of water, respectively. Dry-cooling reduces the amount of water used, but it also reduces efficiency and output capacity, particularly in hotter climates such as the desert. Note: Activities associated with groundwater usage are not considered Covered Activities under the DRECP.
Solar thermal power tower operation (solar flux)	Heliostat technologies use a centrally located tower to collect the focused sunlight from the surrounding arrays of heliostats. Power towers are currently up to 765 feet high and glow with the reflected light from the heliostats when in operation. The concentration of light and heat from the surrounding heliostats may increase the energy flux and consequently the air temperature in the flux zone. A safe flux limit (measured in kW/m^2) has not been determined.
Cleaning of generation facilities, including solar arrays, mirrors, etc.	Regular cleaning of solar thermal heliostats and parabolic troughs is necessary to maintain optimal performance. For the purpose of analysis, water usage was assumed to be 0.5 AFY/MW for parabolic troughs and heliostats. For PV facilities, regular cleaning using water may not be required. The assumed water demand for PV is 0.05 AFY/MW.

Table II.3-21
Description of Activities Associated with Solar Energy Generation

Activity	Description
Dust suppression	Activities required to reduce fugitive dust as the consequence of plant operation that would be undertaken on an as needed basis following standard industry best management practices. Activities include water spraying and use of chemical suppressants.
Fire and fuel management	Fire fuel load management would be undertaken on an as needed basis following standard industry best management practices that minimize impacts on biological resources to the extent feasible. Vegetation management undertaken to reduce fire risk within transmission ROW would be necessary.
Integrated pest management, including trapping and regulated use of pesticides	Pesticides may have to be applied during the operation of a project to control pests and weeds. Such applications must comply with the Federal Insecticide, Fungicide, and Rodenticide Act and state equivalent requirements. In addition, energy sites are subject to federal provisions to control noxious weeds and invasive species and may be subject to regulations governing state-established control areas. Use on BLM-administered lands would comply with the terms of the BLM lease and/or ROW grant.
Cleaning, maintenance, repair, and replacement of access roads and spur road	Cleaning, repair, and maintenance would be undertaken on an as needed basis following standard industry best management practices and additional guidance on a project-by-project basis.
Cleaning and maintenance of facilities	Maintenance, repair, and replacement of generation facilities includes but is not limited to: cleaning, maintenance, repair, and replacement of metrological stations; cleaning, maintenance, repair, and replacement of lines/pipelines and facilities, including those used for utility services; cleaning, maintenance, repair, replacement, and repainting of buildings/structures (including towers/poles); and fence repair and replacement. Cleaning and maintenance would be undertaken on an as needed basis following standard industry best management practices and additional guidance assessed on a project-by-project basis. Activities are assumed to be undertaken within the boundary of already disturbed areas. Maintenance of flood control structures would be undertaken on an as needed basis following standard industry best management practices that minimize impacts on biological resources to the extent feasible.

Table II.3-21
Description of Activities Associated with Solar Energy Generation

Activity	Description
Hazardous materials treatment and disposal	Disposal of hazardous waste would be undertaken on an as-needed basis following applicable federal and state laws and regulations and standard industry best management practices that minimize impacts on biological resources to the extent feasible.
Night lighting	Lighting would be installed throughout the project sites for security and nighttime use of facilities. It is assumed that lighting management would be undertaken following standard industry best management practices that project lighting downwards to minimize impacts on sensitive biological resources to the extent feasible. Lighting configuration, color, and flash patterns would be coordinated with the Federal Aviation Administration where necessary.
Solid waste disposal	All solid waste disposal is assumed to be off site at facilities permitted to receive such waste.
Decommissioning	
Removal of structures	Decommissioning would involve removal of all aboveground facilities and gravel workpads and roads. Subsurface facilities (grounding rods and grids, tower and building foundations, natural gas pipelines, etc.) would be removed to a minimum depth of 3 feet from the surface and otherwise abandoned in place. Laydown areas, each nominally 3 acres in size, would be established to support decommissioning; some may be located on the laydown areas used during construction. Dismantled components would be staged at laydown areas for only as long as necessary to arrange for their removal to disposal, reclamation, or recycling facilities.
Restoration and re-vegetation	All spills and contaminated soils would be remediated. All gravel packs would be removed. Reclamation of laydown areas, substations, access roads, and other "deconstruction" areas would commence immediately upon completion of the dismantlement of the system.

Notes:
lb = pounds; kg = kilograms; kv = kilovolts; AFY = acre-feet per year; MW = megawatts; kW = kilowats; m^2 = square meters

Although the area available to solar generation would be more extensive in the DFAs than for other technologies, not all DFAs were considered suitable for solar development. Areas where construction was considered infeasible, for example where the slope was greater

than 5%, were excluded from consideration (a more detailed discussion of constraints is presented in Section I.3.5).

Solar projects can range from small-scale developments of a few MWs that occupy tens of acres up to 1,000 MW projects that occupy thousands of acres. Given the programmatic nature of the DRECP, extensive detailed analysis of effects that are project-specific (i.e., geographically site-specific) is infeasible. Consequently, the magnitudes of impacts are described in terms of the acreage that would be affected by solar development within each ecoregion subarea of the Plan Area (Table II.3-22).

When estimating the impacts of solar projects on biological resources, it was assumed that the construction of projects would result in the permanent loss of all resources within the boundary of the project. Two reasons are given for this: (1) unlike other technologies, solar projects are generally fenced to exclude wildlife and result in modification to natural processes for the life of the project; and (2) although some vegetation may be preserved at some project locations, this would not be universal and conditions of service often lead to the removal of vegetation to reduce fire risk. Further, the extensive removal, modification and grading within the project boundary, even if vegetation were not completely removed, could lead to edge effects that effectively modify the remaining vegetation communities. Therefore, the acreage requirements for roads, operation and maintenance facilities, and switchyards required for each facility are included in the overall estimated boundary of the solar project. Similarly, short term impacts, such as construction and laydown yards, were assumed to be within the final boundary of the project and therefore subsumed within the boundary estimate. Table II.3-22 summarizes the long-term impacts for solar technologies, and provides the following information:

- **Total Long-Term Ground Disturbance Impacts**. Estimated total acreage affected by solar development activities such as vegetation clearance, grading, and construction. This is effectively a summation of the solar generation facility footprints, including operations and maintenance building, switchyard, and road construction impacts. Due to the difficulty of restoration in a desert environment, all activities that result in vegetation removal or disturbance are considered permanent for the purpose of analysis.
- **Total Project Area**. An estimate of the total area occupied by a given project. For dense technologies like solar generation, the total project area is identical to the total permanent ground-conversion impacts.

Table II.3-22
Long-Term Disturbance and Project Area Acreages Associated with Solar and Ground-Mounted Distributed Generation by Ecoregion Subarea – Preferred Alternative

Ecoregion Subarea	Long-Term Disturbance and Project Area (acres)		
	Plan-Wide	*LUPA*	*GCP*
Cadiz Valley and Chocolate Mountains	26,000	18,000	7,000
Imperial Borrego Valley	40,000	7,000	33,000
Kingston and Funeral Mountains	3,000	2,000	700
Mojave and Silurian Valley	3,000	1,000	2,000
Owens River Valley	500	500	—
Panamint Death Valley	—	—	—
Pinto Lucerne Valley and Eastern Slopes	8,000	2,000	6,000
Piute Valley and Sacramento Mountains	—	—	—
Providence and Bullion Mountains	1,000	500	500
West Mojave and Eastern Slopes	37,000	5,000	32,000
Total	**118,000**	**37,000**	**80,000**

Notes: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

II.3.1.4.2 Wind Energy Generation

This section describes wind energy technology in operation today, including some of the specific characteristics of projects based on current technology and design. However, future advances in technology may affect the design of facilities within the timeframe of the DRECP. Therefore, the following description is limited to the features used on current wind facilities. Future designs may deviate from the specific descriptions provided here, and depending on the level of increased impacts associated with such future designs, may not be eligible for coverage under the DRECP.

Projects typically consist of ancillary facilities, supporting infrastructure and multiple arrays of wind turbines distributed across a project site to best take advantage of prevailing winds. Features that are common to all wind projects include operation and maintenance (O&M) buildings, switchyards and substations, and wind turbines. All wind projects would also require access roads for construction, routine maintenance, and operations.

Wind turbines consist of three main parts: the turbine tower, turbine rotor, and nacelle. The turbine tower typically consists of tubular steel pole sections. Turbines generally

would be spaced no less than 1.2 rotor diameters apart, but may be spaced farther apart for environmental considerations and to prevent wind shadowing (wind blockage by other turbine structures). Modern turbines are generally a horizontal-axis design. A turbine is composed of a tower, nacelle, hub, blades/rotor, controller, central Supervisory Control and Data Acquisition system for communication, transformer, braking system, safety lighting, and lightning protection system. For current turbines the total height at the highest point of the rotor blade rotation would be between 388 feet and 492 feet above ground surface. The ground clearance for the rotor blades at their lowest point of rotation would be between 91 feet and 138 feet above ground surface. Turbines typically include a transformer located either in the turbine unit or at the base of each turbine that is utilized to step-up the electricity received from the wind turbine for distribution in the collector cable system. The collector system connects the individual turbines and transmits electricity to a centrally located collector substation.

Activities Associated with Wind Energy Generation

This section describes the activities associated with wind projects that would be covered by the DRECP. Both construction and operational activities are listed and described in Table II.3-23. Where feasible, acreage impacts of individual activities are quantified, although it is not feasible to quantify all Covered Activities as the impacts may be too site-specific (i.e., dependent on a particular geographic location); where this is the case, a general description of the activity is provided.

Table II.3-23
Description of Activities Associated with Wind Energy Generation

Activity	Description
Pre-Construction And Construction Activities	
Geotechnical borings	Full geotechnical testing of multiple bores to a depth of up 40 feet would be required at each proposed turbine location before construction begins.
Installation of temporary meteorological stations	Meteorological towers are installed across a potential site to assess the wind generation potential. The number of towers is typically dependent upon the size of the project terrain although typically there may be 2–4 towers on each site. Meteorological towers assess wind density at a height similar to typical turbine towers, and are typically 200-foot-tall guyed monopole structures.
Temporary access routes and staging areas for meteorological towers and geotechnical borings	Temporary vehicular access may result in disturbance, but access corridors would be identified, utilizing existing tracks and roadways where possible.

Table II.3-23
Description of Activities Associated with Wind Energy Generation

Activity	Description
Site reconnaissance (including species-specific surveys)	Site surveys would be required prior to any permitting or construction activities. Activities are assumed to utilize existing roads, tracks, and access.
Access roads/spur roads (permanent and temporary)	Construction of a permanent road to each turbine is necessary for both construction and operations. The extent of road construction is dependent upon the site topography, condition, and extent of current roads. Access roads require a shallow gradient (typically less than 10%) to enable heavy lifting cranes to access the turbine sites. In steep or complex terrain, road width may be 40 feet or wider to accommodate the turning circle of vehicles delivering turbine components. Access roads for turbine construction may have to be temporarily widened to accommodate heavy vehicles that transport tower components and nacelles. For example, recent construction for the Ocotillo Express Wind project in Imperial County required the construction of 42 miles of new road for the 350 MW project. Similarly, the nearby Tule Wind project required 23 miles of access road for a 201 MW project. For the purpose of analysis 0.33–0.35 acre of road impacts were assumed for each 2 MW turbine.
Ground-disturbance activities (including grading and clearing vegetation)	Vegetation clearance for construction and operational activities would occur at all sites. At each turbine site, vegetation clearance and grading would be necessary to prepare the ground for heavy lifting cranes and transport vehicles. Typically, an area about 400 feet in diameter (2.885 acres) is cleared for each turbine, within which an area is compacted and stabilized to enable the use of heavy lifting cranes. Additional clearance would be required for substations, control and maintenance buildings etc. The expected effects associated with these components are discussed below.
Site preparation (e.g., excavation for foundations)	Grading and foundations would be necessary for all permanent structures, including turbine sites, switchyards, and operations and maintenance buildings. Different methods are used for constructing the foundations for wind turbines, depending upon geotechnical conditions and loading: **Patrick and Henderson Inc. Foundation.** This patented foundation type would be drilled or dug to approximately 15 to 35 feet deep and would be approximately 18 feet in diameter. The foundation would be in the configuration of an annulus—two concentric steel cylinders. The central core of the smaller, inner cylinder would be filled with soil removed during excavation. In the cavity between the rings, bolts would be used to anchor the tower to the foundation, and the cavity would be filled with concrete. Bolting the tower to the foundation would provide post-

Table II.3-23
Description of Activities Associated with Wind Energy Generation

Activity	Description
	tensioning to the concrete. **Rock Anchor.** For each foundation, 6 to 20 holes would be drilled approximately 35 feet into the bedrock, and steel anchors would be epoxy-grouted in place. A reinforced concrete cap containing the anchor bolts would be poured on the top of the steel anchors to support the tower structure. **Spread-Footing.** This foundation for turbines or other structures would be square or octagonal and formed with reinforcing steel and concrete. This type of foundation could be as large as 35 feet by 35 feet and 6 feet to 10 feet thick. • Transmission switchyards would typically have drilled pier, mat and pad type foundations installed with a grounding grid below grade before back filling occurs. • Permanent buildings would typically require no more than a concrete slab on foundations at grade level.
Turbine erection	To enable the lifting and erection of each turbine, a cleared and graded temporary work area 400 feet in diameter is assumed. Ground disturbance during construction would lead to soil compaction and while the area may be re-vegetated it should be considered permanently disturbed. Therefore, each turbine would result in up to 2.885 acres of permanent disturbance.
Ancillary buildings and general facilities.	Permanent operations and maintenance buildings would be constructed utilizing standard building and construction techniques. Ancillary facilities are assumed to include parking and equipment storage facilities and would typically occupy 5 acres.
Clearing, staging, parking, construction trailer, and equipment and material storage areas	Temporary construction areas, including laydown yards, on-site construction trailers, material storage, and on-site cement batch plants, would require clearing and grading and are assumed to occupy 40–50 acres.
Fencing (temporary and permanent, for both wildlife and security)	Temporary security fencing around laydown yards, on-site construction trailers, material storage, and on-site cement batch plants would usually be required. Permanent fencing is only required around operations and maintenance buildings, switchyards, and met towers. Individual turbines are not usually fenced.
Temporary drainage and erosion control (e.g., diversion channels, retention/detention basins, silt fences, erosion fabrics)	Temporary drainage and erosion control may be required at laydown yards and temporary sites, and would be determined on a project specific basis, and comply with county, state, and federal requirements.

Table II.3-23
Description of Activities Associated with Wind Energy Generation

Activity	Description
Permanent drainage: conveyance or semi-natural	Culverts and drainage modification may be necessary to divert and control runoff. Drainage systems would be constructed to federal and state standards. It is assumed that permanent drainage management systems would seek to minimize the disruption to natural flow. Further, the design would minimize areas of direct vegetation removal, channel re-routing, grading, and leveling; and minimize the amount of active stormwater management using channels, ponds, re-routing and man-made channels, and culverts.
Flood control structures	Temporary drainage control may be required at laydown yards and temporary sites including temporary roads, but would be determined on a project-specific basis.
Installation of utility services	Utility services would be required to operations and maintenance buildings. Installation may include trenching and backfilling activities, but would seek to use established ROW. Utility services include: • Electric distribution lines, facilities, and interconnections • Sewage facilities/pipelines • Telecommunication lines and facilities • Trash collection and disposal • Water wells or municipal water supply and pipelines
Meteorological stations	Permanent meteorological stations are assumed to be self-supporting monopole structures up to 265 feet above ground surface with a permanent disturbance footprint of 0.02 acre
Transmission collector lines	Transmission collector lines for a wind facility are typically run at 34.5 kV. Collector systems may be installed overhead on steel or wood monopoles between 60–80 feet high, or may be installed underground in a trench 4 feet deep.
Generator tie lines (gen-ties)	Generator tie lines are sole-use facilities constructed by an electric generator to interconnect and transmit its power to the electric grid. Depending on the size of the generation facility and the substation to which the facility is being connected, these lines can be between 69 and 500 kV. For 69 KV lines, conductors are typically installed on 68–120-foot-tall steel or wood monopole structures. Higher voltages can be installed on either monopole or lattice steel structure of up to 160 feet tall.
Operation and Maintenance Activities	
Wind turbine operations	Operation of wind turbines, by definition, requires the blades to spin to generate electricity. Turbines are typically between 300 and 500 feet above ground surface, including blade length, and for the purpose of analysis turbines are assumed to be 492 feet above ground surface,

Table II.3-23
Description of Activities Associated with Wind Energy Generation

Activity	Description
	to blade tip and 344 feet above ground surface to the turbine nacelle. Under operational conditions each turbine results in a blade swept area of between 2.47–2.55 acres, depending upon the length of the blades. Blades may be operational at any time of the year and in wind speeds between 3.5 m/s and 5.5 m/s (15–55 mph). For analysis purposes, each turbine was assumed to be 2 MW with a blade swept area of 2.55 acres.
Dust suppression	Activities required to reduce fugitive dust as the consequence of plant operation would be undertaken on an as needed basis following standard industry best management practices. Activities include water spraying and use of chemical suppressants.
Fire and fuel management	Fire fuel load management would be undertaken on an as needed basis following standard industry best management practices that minimize impacts on biological resources to the extent feasible. Vegetation management undertaken to reduce fire risk within transmission ROW would be necessary.
Integrated pest management, including trapping and regulated use of pesticides	Herbicides may have to be applied during the operation of a project to control invasive weed species. Such applications must comply with all applicable federal and state laws and regulations, including but not limited to the Federal Insecticide, Fungicide, and Rodenticide Act and state equivalent requirements. In addition, energy sites are subject to federal provisions to control noxious weeds and invasive species and may be subject to regulations governing state-established control areas. Use on BLM-administered lands would comply with ROW grant.
Cleaning, maintenance, repair, and replacement of access roads and spur road	Cleaning, repair, and maintenance would be undertaken on an as needed basis following standard industry best management practices and additional guidance on a project-by-project basis.
Cleaning and maintenance of facilities	Maintenance, repair, and replacement of generation facilities would, on average, require each turbine to undergo 8 to 16 hours of scheduled mechanical and electrical maintenance per year. Routine maintenance may include, but would not be limited to, replacing lubricating fluids, checking parts for wear and replacing as required and recording data from data-recording chips in all pertinent equipment including anemometers. Maintenance of other facilities would include: cleaning, maintenance, repair, and replacement of metrological stations; cleaning, maintenance, repair, and replacement of lines/pipelines and facilities, including those used for utility services; cleaning, maintenance, repair, replacement, and repainting of buildings/structures (including towers/poles); fence repair and replacement; access roads, crane and turbine pads, erosion control systems, and perimeter fencing would

Table II.3-23
Description of Activities Associated with Wind Energy Generation

Activity	Description
	be regularly inspected and maintained to ensure minimal degradation. Cleaning and maintenance would be undertaken on an as needed basis following standard industry best management practices and additional guidance assessed on a project-by-project basis. Activities are assumed to be undertaken within the boundary of already disturbed areas. Maintenance of flood control structures would be undertaken on an as needed basis following standard industry best management practices that minimize impacts on biological resources to the extent feasible.
Hazardous materials treatment and disposal	Disposal of hazardous waste would be undertaken on an as needed basis in compliance with all applicable federal and state laws and following standard industry best management practices that minimize impacts on biological resources to the extent feasible.
Night lighting	Lighting would be installed throughout the project sites for site for security and nighttime use of facilities. It is assumed that lighting management would be undertaken following standard industry best management practices that project lightings downwards to minimize impacts on sensitive biological resources to the extent feasible.
Solid waste disposal	All solid waste disposal is assumed to be off site at a facility permitted to receive such waste.
Decommissioning	
Removal of structures	Decommissioning would involve removal of all aboveground facilities and gravel workpads and roads. Subsurface facilities (grounding rods and grids, tower and building foundations, natural gas pipelines, etc.) would be removed to a minimum depth of 3 feet from the surface and otherwise abandoned in place. Laydown areas, each nominally 3 acres in size, would be established to support decommissioning; some may be located on the laydown areas used during construction. Dismantled components would be staged at laydown areas for only as long as necessary to arrange for their removal to disposal, reclamation, or recycling facilities.
Restoration and re-vegetation	All spills and contaminated soils would be remediated. All gravel packs would be removed. Reclamation of generation facilities laydown areas, substations, access

Table II.3-23
Description of Activities Associated with Wind Energy Generation

Activity	Description
	roads, and other "deconstruction" areas would commence immediately upon completion of the dismantlement of the system.

Notes:
kv = kilovolts; MW = megawatts; m/s = meters per second; mph = miles per hour

The area available to wind development was constrained by several factors, including areas where construction was considered infeasible, and areas where turbine construction has been precluded by ordinance or general policy.

Wind projects can range from small-scale developments of a few megawatts that occupy tens of acres up to several hundred megawatt projects that occupy thousands of acres. Given the programmatic nature of the DRECP, extensive detailed analysis of effects that are project specific (i.e., geographically site-specific) is infeasible. Therefore, the magnitudes of impacts are described in terms of the acreage that would be affected by wind energy generation activities within each ecoregion subarea of the Plan Area.

Wind projects result in relatively diffuse impacts spread across a wide area. Turbines are widely spaced and connected by permanent access roads, and transmission infrastructure, with centralized maintenance facilities and switchyards. Unlike solar, not all the land within the boundary of a wind project was assumed to be permanently disturbed by project activities. For the purpose of analysis, estimates of disturbed acreage were the sum of the estimated acreage required for turbine pads, roads, ancillary facilities, and supporting infrastructure. Short term construction activities, such as laydown yards, were assumed to result in long-term disturbance within the project boundary, and were also included in the estimate of permanently disturbed acreage. In addition to estimates of ground disturbance, the area likely to be impacted by the operation of the turbine rotors (airspace) was also estimated. For analysis purposes turbines were grouped into conceptual projects of up to 200 MWs to enable an estimation of impacts from ancillary facilities, roads, turbines etc. Table II.3-24 summarizes the long-term impacts for wind technologies, and provides the following information by ecoregion:

- **Total Project Area**. An estimate of the total area occupied by a given project. For technologies where the project may be spread across a greater area (e.g., wind energy generation), the permanent impacts are distributed over a larger area.
- **Estimated Long-Term Ground Disturbance**. Estimated total acreage directly disturbed by Covered Activities described above. This is effectively a summation of all potential wind generation facility footprints, including individual turbine pad, operations and maintenance building, switchyard, and road construction impacts.

This estimate also includes the additional impacts that would occur as a consequence of construction activities including construction areas, laydown yards, and storage facilities. Due to the difficulty of habitat restoration in a desert environment all activities that result in vegetation removal or disturbance were considered permanent for the purpose of analysis.

- **Turbine Rotor Swept Area** – An estimate of the total aerial acreage affected by the rotation of turbine blades while a wind facility is operating.

Table II.3-24
Project Area, Long-Term Disturbance, and Rotor Swept Area Acreages Associated with Wind Generation by Ecoregion Subarea – Preferred Alternative

Ecoregion Subarea	Project Area (acres)			Long-Term Disturbance (acres)			Rotor Swept Area (acres)		
	Plan-Wide	*LUPA*	*GCP*	*Plan-Wide*	*LUPA*	*GCP*	*Plan-Wide*	*LUPA*	*GCP*
Cadiz Valley and Chocolate Mountains	57,000	50,000	7,000	3,000	3,000	400	2,000	2,000	200
Imperial Borrego Valley	6,000		6,000	400		400	200		200
Kingston and Funeral Mountains	—	—	—	—	—	—	—	—	—
Mojave and Silurian Valley	—	—	—	—	—	—	—	—	—
Owens River Valley	—	—	—	—	—	—	—	—	—
Panamint Death Valley	—	—	—	—	—	—	—	—	—
Pinto Lucerne Valley and Eastern Slopes	38,000	10,000	29,000	2,000	500	2,000	1,000	300	900
Piute Valley and Sacramento Mountains	—	—	—	—	—	—	—	—	—
Providence and Bullion Mountains	—	—	—	—	—	—	—	—	—
West Mojave and Eastern Slopes	60,000	4,000	56,000	3,000	200	3,000	2,000	100	2,000
Total	**162,000**	**64,000**	**98,000**	**9,000**	**3,000**	**5,000**	**5,000**	**2,000**	**3,000**

Notes: See Chapter I.3 and Appendix F for detailed descriptions of the methodology used to estimate the acreage amounts listed in this table.
The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

II.3.1.4.3 Geothermal Energy Generation

Geothermal resources can provide energy for power production and other applications by using subsurface heat from the earth to generate steam and drive turbine generators. Geothermal power can be developed where subsurface temperature gradients are elevated, such as in areas of young volcanism. However, there are other geologic settings favorable to geothermal development, including areas where the earth's crust is relatively thin, which leads to greater heat flow from the earth's interior. Tectonically active (but not necessarily volcanic) areas are also favorable because of the presence of significant faulting and fracturing that can allow deep circulation and heating of ground waters. Subsurface temperature gradients measured in wells help to determine the potential for geothermal development and the type of geothermal power plant installed. High-energy sites are suitable for electricity production, while low-energy sites are suitable for direct heating. Most of the known and most easily accessible geothermal resources in the United States are concentrated in the west and southwest parts of the country.

Geothermal power generation facilities generally consist of a production well that is drilled into a known geothermal reservoir. Typically, an injection well is also drilled to return used geothermal fluids to the geothermal reservoir. Hot, pressurized geothermal fluid, or a secondary working fluid, is allowed to expand rapidly and provide rotational or mechanical energy to turn the turbine blades on a shaft. Three geothermal power plant technologies are typically used to convert hydrothermal fluids to electricity. The conversion technologies are dry steam, flash, and binary cycle. The type of conversion used depends on the state of the fluid (whether steam or water) and its temperature. Dry steam power plant systems use the steam from the geothermal reservoir as it comes from wells, and route it directly through turbine/generator units to produce electricity. Flash steam plants are the most common type of geothermal power generation plants in operation today, and use water at temperatures greater than 360°F that is pumped under high pressure to the generation equipment at the surface. Binary cycle geothermal power generation plants pass moderately hot geothermal water by a secondary fluid with a much lower boiling point than water. This causes the secondary fluid to flash to vapor, which then drives the turbines.

Activities Associated with Geothermal Energy Generation

This section describes the activities associated with geothermal projects that would be covered by the DRECP. Both construction and operational activities are listed and described in Table II.3-25. Where feasible, acreage impacts of individual activities are quantified, although it is not feasible to quantify all Covered Activities as the impacts may be too site-specific (i.e., dependent on a particular geographic location); where this is the case, a general description of the activity is provided.

Table II.3-25
Description of Activities Associated with Geothermal Energy Generation

Activity	Description
Pre-Construction and Construction Activities	
Geotechnical borings	Full geotechnical testing to establish the suitability of the site for construction would vary depending on the size and technology. Exploratory borings to test temperature gradients are assumed to require up to 12 individual holes disturbing up to 0.15 acres per hole or about 2 acres per project.
Temporary access routes and staging areas for geotechnical borings	Temporary vehicular access to undertake pre-construction activity may result in disturbance but access corridors would be identified, utilizing existing tracks and roadways where possible.
Site reconnaissance (including species-specific surveys)	Site survey would utilize the existing roads, tracks and access or may assess the areas on foot.
Access roads/spur roads (permanent and temporary)	Generally, a single road would be required to access the site. Roads leading to the facility would be constructed to federal and state standards and would typically consist of a 20-foot-wide two-lane highway with 2 feet for shoulders on either side. Construction of permanent roads to access wells is necessary for both construction and operations. The extent to which roads would need to be constructed is dependent upon the site topography, condition, and extent of current roads. Access roads within the boundary of a project site would consist of compacted gravel no more than 10 feet wide.
Ground-disturbance activities (including grading and clearing vegetation)	Grading and clearing of vegetation would be necessary for the construction of the main generation site, and for each well pad. Up to 40 acres of permanent clearing and grading would be required for the main site and about 2 acres for each well pad. For a 50 MW plant consisting of a power plant site and about 30 well pads, about 100 acres of permanent ground disturbance would occur.
Site preparation (e.g., excavation for foundations)	Geothermal power plant facilities may require excavation 6–8 feet below grade due to the weight and size of facilities such as cooling towers where applicable. Permanent buildings, including operation and maintenance buildings, would typically require no more than a concrete-on-slab foundation at grade level. Transmission switchyards typically have drilled pier, mat and pad type foundations that are installed with a grounding grid, below grade before back filling occurs.

Table II.3-25
Description of Activities Associated with Geothermal Energy Generation

Activity	Description
Well-field facilities	Well-fields consist of multiple injection and production wells situated on concrete pads that hold all the equipment necessary to operate a well. Geothermal production fluid pipelines and injection fluid pipelines run throughout the well-field to circulate steam and fluids between the well-field and the generation site. Piping is extensive throughout the well-field, with a 50 MW facility requiring between 7–10 miles of co-located pipelines. Well-fields can be extensive and occupy the bulk of the affected acreage for a geothermal facility. The total affected area for a geothermal facility is estimated at 5 acres per MW. For a 50 MW facility the affected area would be about 250 acres.
Generation facilities	For the purposes of analysis, all generation facilities are assumed to be co-located on a single cleared and graded site. Construction of the central energy production facilities includes power generation units, fluid pressure vessels, vapor recovery units, cooling facilities, and regenerative thermal oxidizer scrubbers. For the purposes of analysis, the facilities are assumed to occupy 40 acres of graded and cleared land for a 50 MW unit.
Ancillary buildings and general facilities	Permanent operations and maintenance buildings would be constructed utilizing standard building and construction techniques. Ancillary buildings are assumed to be located at a central power plant site, include parking and equipment storage facilities, and would typically occupy 5 acres**.**
Clearing, staging, parking, construction trailer, and equipment and material storage areas	Temporary construction areas, including laydown yards, on-site construction trailers, material storage, and on-site cement batch plants would require clearing and grading and are assumed to occupy 40–50 acres.
Fencing (temporary and permanent, for both wildlife and security)	Temporary security fencing around laydown yards, on-site construction trailers, material storage, and on site cement batch plants would usually be required. Permanent security fencing would surround the perimeter of the site.
Temporary drainage and erosion control (e.g., diversion channels, retention/detention basins, silt fences, erosion fabrics)	Temporary drainage and erosion control may be required at laydown yards and temporary sites, and would be determined on a project specific basis, and comply with county, state, and federal requirements.
Permanent drainage: conveyance or semi-natural	Culverts and drainage modification may be necessary to divert and control runoff. Drainage systems would be constructed to federal

Table II.3-25
Description of Activities Associated with Geothermal Energy Generation

Activity	Description
	and state standards. It is assumed that permanent drainage management systems would seek to minimize the disruption to natural water flow. Further, the design would minimize areas of direct vegetation removal, stream re-routing, grading, and leveling; and minimize the amount of active stormwater management using channels, ponds, re-routing and man-made channels, and culverts.
Flood control structures	Temporary drainage control may be required at laydown yards and temporary sites including temporary roads, but would be determined on a project specific basis.
Installation of utility services	Utility services would be required for operations and maintenance buildings. Installation may include trenching and backfilling activities, but would seek to use established ROW. Utility services include: • Electric distribution lines, facilities, and interconnects • Sewage facilities/pipelines • Telecommunication lines and facilities • Trash collection and disposal • Water wells or municipal water supply and pipelines
Generator tie lines (gen-ties)	Generator tie lines are sole-use facilities constructed by an electric generator to interconnect and transmit its power to the electric grid. Depending on the size of the generation facility and the substation to which the facility is being connected, these lines can be between 69 and 230 kV. For 50 MW geothermal facilities, generator tie lines would usually be wood or steel 69 kV monopole structures. In some facilities that are closely located to other generation sites a 230 kV line may be shared between different sites. Generator tie line ROW requirements are described as part of transmission impacts because of the possibility that impacts may occur outside DFAs.
Operations and Maintenance Activities	
Steam turbine and generation operations	Steam turbines are driven by the geothermal gradients to produce electricity. The operational impacts of geothermal plants are dependent on the technology and the cooling system being used being used. Closed loop systems using wet cooling technology may require significant quantities for water for cooling. Cooling towers for closed loop wet cooling facilities can use up to 110 AFY/MW, such as the East Brawley facility in Imperial County.

Table II.3-25
Description of Activities Associated with Geothermal Energy Generation

Activity	Description
	Other facilities, using flash plant and hybrid or dry cooling technologies may use considerable less water, such as the 2.37–3.83 AFY/MW for Black Rock 1, 2, 3 Geothermal Power Project, Imperial County.
Dust suppression	Includes any activities required to reduce fugitive dust as the consequence of plant operation that would be undertaken on an as needed basis following standard industry best management practices. Activities include water spraying and use of chemical suppressants.
Fire and fuel management	Fire fuel load management would be undertaken on an as needed basis following standard industry best management practices that minimize impacts on biological resources to the extent feasible. Vegetation management undertaken to reduce fire risk within transmission ROW would be necessary.
Integrated pest management, including trapping and regulated use of pesticides	Pesticides may have to be applied during the operation of a project to control pests and weeds. Such applications must comply with the Federal Insecticide, Fungicide, and Rodenticide Act and state equivalent requirements. In addition, energy sites are subject to federal provisions to control noxious weeds and invasive species. They may be subject to regulations governing state-established control areas. Use on BLM would comply with terms ROW.
Cleaning, maintenance, repair, and replacement of access roads and spur road.	Cleaning, repair, and maintenance would be undertaken on an as needed basis following best management practices and additional guidance on a project-by-project basis.
Cleaning and maintenance of facilities	Maintenance, repair, and replacement of generation facilities includes but is not limited to: cleaning, maintenance, repair, and replacement of metrological stations; cleaning, maintenance, repair, and replacement of lines/pipelines and facilities, including those used for utility services; cleaning, maintenance, repair, replacement, and repainting of buildings/structures (including towers/poles); fence repair and replacement. Cleaning and maintenance would be undertaken on an as needed basis following standard industry best management practices and additional guidance assessed on a project by project basis. Activities are assumed to be undertaken within the boundary of already disturbed areas. Maintenance of flood control structures would be undertaken on an as needed basis following standard industry best management practices that minimize impacts on biological resources to the extent feasible.

Table II.3-25
Description of Activities Associated with Geothermal Energy Generation

Activity	Description
Hazardous materials treatment and disposal	Disposal of hazardous waste would be undertaken on an as needed basis following standard industry best management practices that minimize impacts on biological resources to the extent feasible.
Night lighting	Lighting would be installed throughout the project sites for site for security and nighttime use of facilities. It is assumed that lighting management would be undertaken following standard industry best management practices that project lights downwards to minimize impacts on sensitive biological resources to the extent feasible.
Solid waste disposal	All solid waste disposal is assumed to be off site at a facility permitted to handle such waste.
Decommissioning	
Removal of structures	Decommissioning would involve removal of all aboveground facilities and gravel workpads and roads. Subsurface facilities (grounding rods and grids, tower and building foundations, natural gas pipelines, etc.) would be removed to a minimum depth of 3 feet from the surface and otherwise abandoned in place. Laydown areas, each nominally 3 acres in size, would be established to support decommissioning; some may be located on the laydown areas used during construction. Dismantled components would be staged at laydown areas for only as long as necessary to arrange for their removal to disposal, reclamation, or recycling facilities.
Restoration and re-vegetation	All spills and contaminated soils would be remediated. All gravel packs would be removed. Reclamation of generation facilities laydown areas, substations, access roads, and other "deconstruction" areas would commence immediately upon completion of the dismantlement of the system.

Notes:
kv = kilovolts; AFY = acre-feet per year; MW = megawatts

For the Preferred Alternative, the area available to geothermal development is limited to areas in the Imperial Borrego Valley and part of the Owens River Valley ecoregion subareas where geothermal resources are concentrated.

Geothermal projects would be more limited in size (in the Plan Area) than other renewable energy projects. Recent projects vary from about 50 MW to 160 MW. For analysis within the DRECP, geothermal projects were assumed to be typically 50 MW in size. Given the programmatic nature of the Plan extensive detailed analysis of effects that are project

specific (i.e., geographically site-specific) is infeasible. Consequently, the magnitudes of impacts are described in terms of the acreage that would be affected by geothermal energy generation within each ecoregion subarea of the Plan Area.

Geothermal projects result in extensive impacts associated with the power block and ancillary facilities, with more dispersed impacts resulting from the well-fields. Well heads that inject and collect heat transfer fluids, are widely spaced and connected by permanent access roads and pipelines to the centrally located power block and steam turbine facilities. All land within the boundary of a geothermal project was assumed permanently disturbed by project activities. Estimates of disturbed acreage include the acreage required for well head pads, roads, ancillary facilities, and supporting infrastructure, and also includes the land fragmented by the roads, pipelines and well pads in the well-field, which was assumed to retain no conservation value. Short-term construction activities, such as laydown yards, were assumed to result in permanent disturbance within the project boundary, and are also included in the estimate of permanently disturbed acreage. Table II.3-26 summarizes the long-term impacts for geothermal technologies, and provides the following information by ecoregions:

- **Estimated Long-Term Ground Disturbance**. Estimated total acreage affected by Covered Activities such as vegetation clearance, grading, and construction. This is effectively a summation of all potential geothermal generation facility footprints, including operations and maintenance building, switchyard, and road construction impacts, plus the additional impacts that occur as a consequence of construction activities, and the fragmented land within the well-field. Due to the difficulty of restoration in an arid environment, all activities that result in vegetation removal or disturbance were considered permanent for the purpose of analysis.
- **Total Project Area**. An estimate of the total area occupied by a given project. For technologies where the impacts may be spread across a greater area (e.g., geothermal energy generation), the permanent impacts are distributed over a larger area.

Table II.3-26
Long-Term Disturbance and Project Area Acreages Associated with Geothermal Generation by Ecoregion Subarea – Preferred Alternative

Ecoregion Subarea	Long-Term Disturbance and Project Area (acres)		
	Plan-Wide	*LUPA*	*GCP*
Cadiz Valley and Chocolate Mountains	—	—	—
Imperial Borrego Valley	17,000	6,000	1,000
Kingston and Funeral Mountains	—	—	—
Mojave and Silurian Valley	—	—	—

Table II.3-26
Long-Term Disturbance and Project Area Acreages Associated with Geothermal Generation by Ecoregion Subarea – Preferred Alternative

Ecoregion Subarea	Long-Term Disturbance and Project Area (acres)		
	Plan-Wide	*LUPA*	*GCP*
Owens River Valley	1,000	1,000	—
Panamint Death Valley	—	—	—
Pinto Lucerne Valley and Eastern Slopes	—	—	—
Piute Valley and Sacramento Mountains	—	—	—
Providence and Bullion Mountains	—	—	—
West Mojave and Eastern Slopes	—	—	—
Total	**17,000**	**7,000**	**10,000**

Notes: See Chapter I.3 and Appendix F for detailed descriptions of the methodology used to identify the acreage amounts listed in this table. The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

II.3.1.4.4 Transmission

New or modified/expanded transmission facilities would be necessary for implementation of renewable generation projects in the Plan Area. Transmission facilities would generally include transmission lines, access roads, and substations.

Transmission Lines (including Generator Tie Lines)

Extending or expanding a transmission line may require acquisition and/or expansion of ROW. Covered transmission line activities would generally occur within an existing ROW, but in some cases access roads may be located outside of the designated ROW. Support structures for transmission lines may include lattice steel towers, wood poles, steel monopoles, and transition structures that are specially designed support structures for changing line direction and terminal or “dead-end” line features. Foundations and guy wires may be part of the support structures. In addition, safety features, such as aerial marker spheres and aircraft warning lighting, may also be required. Although extensive use of underground transmission facilities may not be practicable, underground facilities, such as transmission lines, duct banks, and splice vaults, are also included as Covered Activities. Transmission facilities would also require access and spur roads for both construction and operation/maintenance.

For the purpose of analysis, all acreage within a given ROW was assumed to be affected by transmission construction and operation impacts, which incorporates the individual effects

of activities such as tower footprints, laydown yards, pulling sites, and access roads. A Transmission Technical Group (TTG) was convened to identify potential transmission lines that could connect renewable energy generation in the Plan Area to load centers. See Appendix K for the report completed by the TTG. As part of this effort, the TTG developed assumptions for standard transmission components. Transmission line length and width are based on the approximate distance (length) to substation locations and the ROW (width) requirements. Access road length and width are based on the size of the substation, the length of the transmission line, and standard construction methods. Each 230 kV and 500 kV line is assumed to require a permanent access road. The use of helicopters to install transmission lines may reduce the need for access roads in certain situations. Table II.3-27 below provides the typical characteristics of standard bulk transmission components that the TTG used to calculate the acreage of impacts required for new transmission lines.

Table II.3-27
Typical ROW Widths and Linear Impacts of Bulk Transmission

Transmission Line Voltage	Transmission ROW Corridor Width (feet)	Access Road Width (feet)	Impact Extent for 1 Linear Mile (Acres)
34.5 and 66 kV			
Double Circuit Tower Line	30	N/A	3.6
230 kV			
Double Circuit Tower Line	100	24	15
500 kV			
Single Circuit Tower Line	200	24	27
Two Single Circuit Tower Lines	450	24	57
Three Single Circuit Tower Lines	700	24	88
Four Single Circuit Tower Lines	950	24	118

Notes:

- ROW spacing is based on Western Electricity Coordinating Council adjacent circuits definition in order to avoid credible N-2 contingency considerations for lines operated above 300 kV.[3]
- Access road width is added to ROW width for total width of linear disturbance.

Substations and Switchyards

Substations and switchyards are hubs for electrical power sources, and provide a junction and control power flow between the generation facilities and the transmission lines in the area. Substations and switchyards typically contain transformers, shunt capacitors,

[3] http://www.wecc.biz/library/Documentation%20Categorization%20Files/Regional%20Criteria/TPL-001-WECC-CRT-2%20System%20Performance%20Criterion%20-%20Effective%20April%201%202012.pdf and http://www.wecc.biz/library/WECC%20Documents/Publications/WECC%20Glossary%2012-9-2011.pdf.

breakers, disconnect switches, protective relays, metering and Supervisory Control and Data Acquisition system equipment, emergency power generators, fire prevention systems (including hydrants, water tanks, and walls between transformer phases), relay/ control shelters, storage buildings, oil and chemical containment systems, and communications facilities. Telecommunication lines are often required for substations and are often, but not always, strung on transmission structures.

A new or expanded substation may require ground disturbance to accommodate additional transformers, new distribution line outlets, and possibly new fencing for safety and security. Substation sites are typically graded, paved, or surfaced with hardscape. Table II.3-28 describes the sizes of various types of substations. Outside of the Plan Area, only 500/230 kV collector substations are proposed.

Table II.3-28
Typical Substation Size

Substation Type	Description	Size (Acres)
66 kV Collector Substation	Receiving transmission from generators or from smaller collector substations. Serves as the receiving point for 66 kV collector transmission lines	39 acres
230/66 kV Collector Substation	Serves as the receiving point for both 230 and 66 kV collector transmission lines	77 acres
500/230 kV Collector Substation	Serves as the receiving point for 500 kV and 230 kV collector lines and 230/66 kV collector substations	176 acres
500/230/66 kV Super Collector Substation	The largest and most flexible substation, as it can serve as the receiving point for 500 kV, 230 kV, and 66 kV collector lines and 230 and 500 kV lines that connect this facility to the bulk electric grid	215 acres

Table II.3-29
Description of Activities Associated with Transmission, Substations, and Generator Tie Lines

Activity	Description
Initial (Pre-Construction) Activities	
Geotechnical borings	Full geotechnical testing to establish the suitability of the site for construction would vary depending on the size of transmission facilities needed.
Temporary access routes and staging areas for geotechnical borings	Temporary vehicular access to undertake pre-construction activity may result in unusual vehicular disturbance but generally, access corridors would be identified. This would include utilizing existing tracks and roadways where possible.

Table II.3-29
Description of Activities Associated with Transmission, Substations, and Generator Tie Lines

Activity	Description
Site reconnaissance (including species-specific surveys)	Site surveyors would utilize the existing roads, tracks and access or may assess the areas on foot.
Construction	
Access roads/spur roads (permanent and temporary)	33kV to 69kV Power Lines - no permanent road is assumed to be constructed adjacent to the transmission ROW. 220-500kV Transmission Lines - Construction of a permanent road within the ROW would allow access for construction and subsequently maintenance inspections and repair. Roads would typically run along the ROW, and consist of compacted gravel surface assumed to be no more than 24 feet wide. Helicopters could be used for construction reducing the need for access roads
Ground-disturbance activities (including grading and clearing vegetation)	Grades within tower construction/erection areas would be made level to facilitate lifting-equipment placement and operation If helicopters are used for construction tower staging access pads would be required and may be graded
Site preparation (e.g., excavation for foundations)	Tower foundations would be constructed in accordance with sound engineering practice and in consideration of local conditions. Foundations for towers would be installed at a nominal depth of 14 to 35 feet, after consideration of climate and local soil and subsurface conditions. At least four such foundations would be required for each typical lattice-type tower, while only one foundation would be required for each monopole tower; however, the monopole foundation typically would be deeper (by as much as 20%) and wider than the corresponding dimensions of a lattice tower's foundation installed in the same subsurface conditions. Foundations would likely utilize steel-reinforced annular concrete rings of nominal widths of 4 feet and nominal thicknesses of 8 inches, the centers of which would be backfilled with indigenous soils. Substations and switchyards would be located near the mainline ROW; expansions to ROW dimensions would be made to accommodate such essential facilities when necessary. Substations are assumed to include land that allows for the permanent location of transformers and operations and maintenance facilities as well as a surrounding buffer of land to allow for the orderly organization of transmission lines that

Table II.3-29
Description of Activities Associated with Transmission, Substations, and Generator Tie Lines

Activity	Description
	intersect at the substation. In total, the acreage of land required for a substation varies between 77–215 acres including the surrounding transmission buffer. Substation facilities would be underlain with grounding grids generally extending over the entire ground extent of the substation; in arid areas, grounding grids may need to extend beyond the substation footprint or, alternatively, wells would be drilled to the nearest aquifer for the purpose of establishing adequate electrical ground.
Tower Construction (220 kv and 500 kV lines)	Tower construction/erection activities include tower construction and cable stringing and pulling. Typically, each tower would require an assembly area of at least 100 feet by 200 feet, resulting in approximately 0.23 acre/mile of short term impacts. Lattice towers would require at least 80,000 square feet per tower for construction. For cable pulling activities two cable-pulling sites of 37,500 square feet each (150 feet by 250 feet) would be needed for each section under construction. The affected acreage associated with these activities are included within the overall ROW estimates and disturbance assumed by the TTG.
Clearing, staging, parking, construction trailer, and equipment and material storage areas	Temporary construction areas include laydown yards, on-site construction trailers, and material storage. o Laydown areas would be maintained free of vegetation throughout the construction period for fire safety. o Minimal grade alterations would be made. o Temporary roads would be constructed for access to laydown areas by haul vehicles. Laydown areas for substations would be located entirely within the footprint granted in the lease for the substation. o Laydown areas would not be used for long-term storage of equipment or materials (except that such storage would occur at substations). o Laydown areas would be reclaimed at the end of the construction period, or as soon as the need for each laydown area has ended. o Already disturbed areas would be used as laydown areas when available.

Table II.3-29
Description of Activities Associated with Transmission, Substations, and Generator Tie Lines

Activity	Description
Fencing (temporary and permanent, for both wildlife and security)	Temporary security fencing would be installed around laydown yards, on-site construction trailers, material storage. Permanent security fencing would be required around substations.
Temporary drainage and erosion control (e.g., diversion channels, retention/detention basins, silt fences, erosion fabrics)	Temporary drainage and erosion control may be required at laydown yards and temporary sites, and would be determined on a project specific basis, and comply with county, state and federal requirements.
Permanent drainage: conveyance or semi-natural	Culverts and drainage modification may be necessary to divert and control runoff from road ways. It is assumed that such drainage systems would be constructed to federal and state standards.
Flood control structures	Temporary drainage control may be required at laydown yards and temporary sites including temporary roads, but would be determined at the on a project specific basis.
Operation and Maintenance	
Cleaning, maintenance, repair, and replacement of access roads and spur road, including trimming/removal of native vegetation growing in roadways	Cleaning repair and maintenance would be undertaken on an as needed basis following standard industry best management practices and guidance laid down on a project-by-project basis. Line re-conducting activities would require laydown areas and cable pulling sites similar to construction activities.
Cleaning and maintenance of transmission line	Biannual Transmission line inspection and insulator cleaning would take place either via vehicle or helicopter.
Hazardous materials treatment and disposal	Disposal of hazardous materials would be undertaken on an as needed basis following standard industry best management practices that minimize impacts on biological resources to the extent feasible. Substations transformers, capacitors, switches, bushings, and other electrical devices typically containing dielectric fluids would be free of polychlorinated biphenyls. Electrical equipment containing liquid dielectric fluids would be installed within adequate secondary containment features.
Vegetation management and weed/pest control including fire hazard/fuel management/clearing	Vegetation management and weed control would be undertaken to reduce fire risk. Clearance of and fuel management with power/transmission ROWs would be subject to California Public Utilities Commission, General Order 95 (CPUC GO 95)[1]

Table II.3-29
Description of Activities Associated with
Transmission, Substations, and Generator Tie Lines

Activity	Description
Decommissioning	
Removal structures	Decommissioning would involve removal of all aboveground facilities and gravel workpads and roads; subsurface facilities (grounding rods and grids, tower and building foundations, natural gas pipelines, etc.) would be removed to a depth of 3 feet belowground surface and otherwise abandoned in place. Laydown areas, each nominally 3 acres in size, would be established to support decommissioning; some may be located on the laydown areas used during construction. Dismantled components would be staged at laydown areas for only as long as necessary to arrange for their removal to disposal, reclamation, or recycling facilities.
Restoration and re-vegetation	All spills and contaminated soils would be remediated. All gravel packs would be removed. Reclamation of generation facilities laydown areas, substations, access roads, and other "deconstruction" areas would commence immediately upon completion of the dismantlement of the system.

[1] This General Order controls the construction and operational safety of transmission facilities. It specifies the amount of clearance that is required between transmission facilities and encroaching vegetation, either to ensure that lines aren't affected by vegetation or to reduce the fire risk.

Major Transmission Infrastructure

The subarea distribution of transmission infrastructure described in Table II.3-30 provides an estimate of the disturbance Area of transmission related construction and operation activities.

- **Estimated Long-Term Ground Disturbance**. Estimated total acreage affected by Covered Activities such as vegetation clearance, grading, and construction. This is effectively a summation of transmission impacts. This estimate also includes impacts that occur as a consequence of construction activities, including construction areas, laydown yards, and storage facilities. Due to the difficulty of restoration in a desert environment, all activities that result in vegetation removal or disturbance were considered permanent for the purpose of analysis.

- **Total Project Area**. An estimate of the total area occupied by a given project. For technologies where the impacts may be spread across a greater area, the permanent impacts are distributed over a larger area.

Table II.3-30
ROW Requirements for Transmission Associated with the Renewable Energy Development by Ecoregion Subarea – Preferred Alternative

Ecoregion Subarea	Long-Term Disturbance and Project Area (acres)		
	Plan-Wide	*LUPA*	*GCP*
Cadiz Valley and Chocolate Mountains	13,000	8,000	5,000
Imperial Borrego Valley	12,000	3,000	9,000
Kingston and Funeral Mountains	—	—	—
Mojave and Silurian Valley	1,000	600	500
Owens River Valley	400	200	200
Panamint Death Valley	—	—	—
Pinto Lucerne Valley and Eastern Slopes	4,000	1,000	2,000
Piute Valley and Sacramento Mountains	—	—	—
Providence and Bullion Mountains	400	200	200
West Mojave and Eastern Slopes	2,000	300	2,000
Total	**33,000**	**14,000**	**18,000**

Notes: All transmission disturbance data reflect intermediate disturbance values used for comparative purposes in the analysis. Disturbance area estimates reflecting the most recent TTG Report are provided in Appendix K.
The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

ROW requirements do not include those outside of the Plan Area that are shown in Section II.3.1.4.4.1.

II.3.1.4.4.1 Transmission Outside the Plan Area

Transmission outside the Plan Area that would be required to deliver renewable electricity from the DRECP to load centers is part of the DRECP project for purposes of CEQA and NEPA, and impacts of this transmission are being analyzed along with other project impacts. Transmission outside the Plan Area is not, however, a Covered Activity under the NCCP, GCP, or LUPA components of the DRECP. The potential effects of potential future transmission outside the Plan Area associated with development of covered renewable energy projects and transmission facilities inside the Plan Area are programmatically described and analyzed in Volume IV of the DRECP for each

environmental resource category. This section presents a description of the transmission facilities outside the Plan Area.

As discussed in Section I.3.5.7, the transmission planning process identified the necessary transmission system facility additions to accommodate the 20,000 MW of renewable generation that could be developed in the 2040 timeframe. The basic assumptions used to define impacts of transmission components included consideration of all transmission lines that are likely to be required to interconnect DRECP renewable energy projects to the load centers, outside of the Plan Area. Because the load centers that would use the electricity generated by desert renewables are outside of the DRECP boundary, the TTG identified linear miles and acreages of effects associated with transmission outside of the DRECP boundary.

While the DRECP will not serve as a permitting streamlining mechanism for actions outside of the Plan Area, the development within the Plan Area will drive the need for new transmission development outside the Plan Area. Therefore, to present a complete picture of the effects driven by renewable energy development for CEQA and NEPA purposes, the EIR/EIS describes the potential transmission lines outside the Plan Area and analyzes the effects of these transmission lines. The TTG Report presents locations of transmission lines on maps for each alternative (see Appendix K), but only to allow general descriptions of environmental impacts that could be expected. No specific transmission routes or upgrades outside the Plan Area have been defined at this time.

The assumptions used to calculate acreages of effects for transmission and substation facilities inside the Plan Area are the same as those used to calculate effects of transmission and substations outside the Plan Area and are described in Section II.3.1.4.4. However, approval of the DRECP would not result in any approval of potential future transmission lines outside the Plan Area. All future transmission lines outside of the Plan Area would require new applications by the applicant or utility, compliance with NEPA and CEQA as appropriate, and approvals from the developer (if municipal utilities or irrigation districts) or from the California Public Utilities Commission (if investor-owned utilities) prior to construction. In contrast to transmission facilities within the Plan Area, transmission projects outside the Plan Area would not derive take authorization for state or federally protected species from the DRECP, nor would the DRECP prescribe avoidance, mitigation, or conservation measures for those projects.

Table II.3-31 provides the estimated acreage of effects for likely future transmission and substations outside of the DRECP boundary. For ease of analysis, future transmission lines and substations have been clustered into general geographic boundaries.

Table II.3-31
ROW Requirements for Transmission Outside the Plan Area Associated with Renewable Energy Development – Preferred Alternative

Geographic Area	Transmission	
	Acres	*Miles*
San Diego	2,000	94
Los Angeles	2,000	83
Central Valley	12,000	274
Rialto/Moreno Valley/Devers	12,000	484
Total Outside Plan Area	**29,000**	**782**

Source: See Appendix K, TTG Report.
Notes: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

The potential new transmission lines outside the Plan Area are listed below.

- **San Diego Area:** One 500 kV line from the Imperial Valley Substation to the existing Sycamore Substation (San Diego).
- Los Angeles Area:
  - One 500 kV line from the existing Vincent Substation (just inside the DRECP boundary) to the existing Lighthipe Substation.
  - One 500 kV from the existing Vincent Substation (just inside the DRECP boundary) to the existing Mesa Substation.
  - One Mead, 500 kV Station 6 to Station 7.
- Central Valley:
  - One 500 kV transmission line from the Whirlwind Substation (just inside the DRECP boundary) to the PG&E Midway 500 kV Substation.
  - Two 500 kV lines from the PG&E Midway Substation to the Tesla/Tracy Substation.
- Rialto/Moreno Valley/Devers Area:
  - One 500 kV line from the Devers to Vincent Substation.
  - One 500 kV lines from Devers to Rancho Vista Substation.
  - One 500 kV line from Colorado River Substation to existing Valley Substation. About 103 miles of this line would be outside the DRECP boundary.
  - Three 500 kV lines from Midway X (Imperial Valley) to Devers Substation. About 200 miles of this corridor would be outside the DRECP boundary.

II.3.1.4.5 Conservation Activities

Covered Activities would also include conservation activities associated with the implementation of avoidance, minimization, compensation, monitoring, and adaptive management (e.g., surveying activities, habitat enhancement activities, monitoring activities). The activities necessary to implement the avoidance, minimization, and compensation CMAs described in Section II.3.1.2.5 may result in the incidental take of Covered Species and would be considered Covered Activities under the DRECP. Monitoring and adaptive management activities implemented pursuant to the MAMP described in Section II.3.1.3 may also result in the incidental take or take for scientific purposes of Covered Species and would be considered Covered Activities under the DRECP.

II.3.1.5 Plan Implementation

II.3.1.5.1 Overview

This section includes the following:

- Implementation structure
- Integrated project proposal review process
- Review process for projects seeking streamlining under the DRECP
- DRECP biological conservation and mitigation and reserve assembly
- Information management
- Annual reporting
- Modifications and amendments

II.3.1.5.2 Implementation Structure

II.3.1.5.2.1 Introduction

This section describes the institutional structure and organizational arrangements that will be established to implement the DRECP and sets out the roles, functions, and responsibilities of the various entities that will participate in DRECP implementation (see Exhibit II.3-8). The implementation structure will ensure that institutional expertise, capacity, resources and focus are brought to bear to accomplish the goals and objectives of the DRECP, and that the decision-making process regarding Plan implementation is transparent and understandable.

The implementation structure for the DRECP must take account of each of the various roles and responsibilities that are integral to the successful implementation of a GCP, NCCP and

LUPA and explain which entities will fill them. The roles and responsibilities integral to DRECP implementation include:

- Ensuring coordination among participating agencies and entities and facilitating coordinated decision-making.
- Program administration, including staffing, facilities, data management, and document management.
- Securing and managing funding.
- Implementation of conservation actions, including but not limited to
  - Land acquisition
  - Non-acquisition conservation actions
  - Land stewardship
  - Monitoring and adaptive management
- Determining for each covered project how and/or if the DRECP's programmatic, Plan-wide avoidance, minimization and mitigation measures are being appropriately applied and implemented.
- Compliance monitoring and enforcement.
- Facilitating independent science input.
- Coordination with federal, state, and local agencies that are not DRECP participants but whose actions could affect or be affected by DRECP implementation.
- Tribal coordination and outreach.
- Coordination and outreach with the Department of Defense installations in the Plan Area.
- Coordination of DRECP actions with complementary non-DRECP actions implemented within and immediately surrounding the Plan Area.
- Obtaining stakeholder input.
- Public outreach.

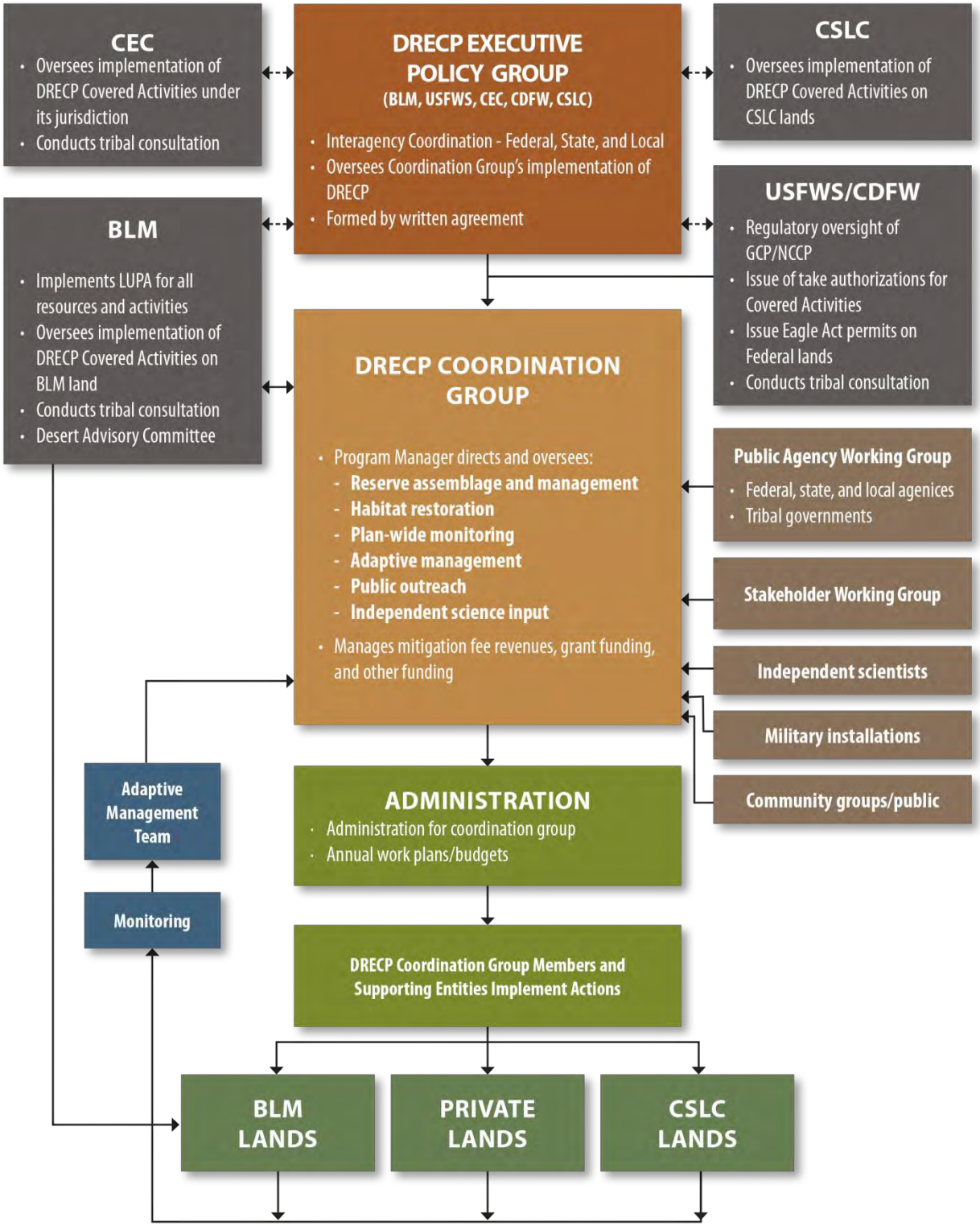

Exhibit II.3-8 DRECP Implementation Structure

Initially, the entities that participate in DRECP implementation will be BLM, USFWS, CEC, CSLC and CDFW. Other federal, state, or local agencies may later become plan participants by developing and implementing conservation plans, land use plans, resource management plans, resource management plans, or land management plans that tier from the DRECP and help to achieve DRECP BGOs along with other goals and objectives within their jurisdiction. In addition, local governments and state agencies may become plan participants without preparing separate plans by applying for and obtaining take authorizations under the GCP and NCCP components of the DRECP for Covered Activities under the local governments' or state agencies' jurisdiction.

DRECP implementation will in some cases be the responsibility of a particular plan participant and in some cases will be shared by more than one participant. The scope and purpose of coordination among the plan participants will vary depending on the role or action requiring coordination. For example, BLM is solely responsible for implementing the LUPA and retains decision-making authority with regard to the LUPA and any actions on BLM-administered lands. However, BLM will coordinate with other plan participants, to the extent consistent with federal law, and in accordance with the concepts and principals of DRECP and Memoranda of Understanding (MOUs) between BLM and CDFW with regard to LUPA implementation issues and activities on public lands that are pertinent to the DRECP. Conversely, while CDFW retains its full statutory authority under the NCCPA, many, if not all, aspects of implementation of the NCCP are pertinent to the DRECP and will be coordinated among the applicable plan participants. The implementation structure clarifies these responsibilities, explains how the plan participants will be organized for implementation purposes, and ensures coordinated and transparent decision-making.

II.3.1.5.2.2 Roles and Responsibilities for Implementation of DRECP Planning Components

The DRECP consists of distinct plan components (LUPA, GCP and NCCP), each of which has its own geographic scope, applies to a particular range of renewable energy and other projects (e.g., federal vs. nonfederal, solar thermal vs. photovoltaic, mining and recreation on BLM lands, etc.), and has distinct implementation responsibilities. Implementation responsibilities that are specific to a particular DRECP plan component will reside with the participant or participants with primary legal responsibility for implementation or oversight of that plan component. Plan-wide aspects of the DRECP, which are not specific to a DRECP plan component, or are included in their entirety only in the NCCP, are intended to be implemented through a collaboration of the applicable plan participants and will not solely be the responsibility of an individual plan participant. CDFW, CEC, and BLM intend to implement NCCP actions on public land administered by BLM in accordance with the concepts and principles of the DRECP, federal law and the MOUs.

Examples of Plan-wide aspects or programs in the DRECP include monitoring and adaptive management, land acquisition, and public outreach. Notwithstanding this collaboration, all agencies retain complete decision-making authority under their respective laws and regulations.

BLM Land Use Plan Amendment

The BLM LUPA is a comprehensive land use plan amendment that applies to specified activities on public land administered by BLM within the Planning Area, including, but not limited to, renewable energy projects. It addresses a full range of impacts, including, but not limited to, impacts to plant, wildlife, natural community, recreation, and cultural resources. Under federal law, BLM is solely responsible for implementation of the LUPA, and all activities that take place on BLM-administered public lands will ultimately require BLM authorization. BLM will continue to implement its land use plans, as amended by the LUPA, according to applicable federal laws, regulations and policies. BLM's ongoing responsibilities regarding land use plan implementation include, among other things:

- Formal tribal consultation.
- Protection of cultural properties.
- Community outreach.
- Management for threatened and endangered species.
- Management for recreation resources.
- Coordination with conservation and management organizations.
- Implementation of the California Desert Advisory Committee chartered under the Federal Advisory Committee Act.

The DRECP implementation structure does not affect BLM's decision-making authority or implementation responsibilities with regard to its land use plans. Instead, BLM's participation in the DRECP implementation structure will be to inform its land use decisions, ensure coordination of land use plan implementation with implementation of the GCP and NCCP, build collaborative and synergistic on-the-ground implementation strategies, and support and participate in implementation of DRECP Plan-wide programs, such as monitoring and adaptive management, and the Plan-wide conservation strategy.

General Conservation Plan

The GCP will provide a framework for streamlining permit decisions for Covered Activities under Section 10 of the federal ESA. The GCP is an "umbrella" or programmatic HCP that the USFWS is developing to provide a detailed framework and guidance that local governments, state agencies, and private entities can use to apply for project-level

incidental take permits resulting from Covered Activities. In addition, if issued a permit under the GCP, a state agency or local government would be able to extend its incidental take authorization to qualified third-party project proponents for Covered Activities over which the agency or local government has jurisdiction. The CEC and CSLC have applied for incidental take permits under the GCP that would enable them to extend incidental take authorization to Covered Activities over which they have jurisdiction.

The GCP does not apply to projects that will be carried out on federal lands. However, it is based on the DRECP's comprehensive conservation strategy and will implement the strategy within the GCP Permit Area. The USFWS's participation in the DRECP implementation structure will inform its permitting decisions and regulatory actions under the GCP, ensure that implementation of the GCP is coordinated with implementation of the LUPA and NCCP, build collaborative and synergistic on-the-ground implementation strategies, and support and participate in implementation of DRECP Plan-wide programs.

Natural Community Conservation Plan

Similar to the GCP, the DRECP NCCP will provide a detailed framework and guidance that public and private entities can use to apply for incidental take authorizations for Covered Activities pursuant to Section 2835 of the California Fish and Game Code. If issued a permit under the NCCP, a state agency or local government would be able to extend its take authorization to qualified third-party project proponents for Covered Activities over which the agency or local government has jurisdiction. The CSLC has applied for a take authorization under the NCCP that would enable it to extend take authorization to qualified third-party project proponents for Covered Activities on CSLC lands.

Unlike the GCP, the NCCP can cover projects that will be carried out on federal land or otherwise have a federal nexus. The NCCP is the only planning component of the DRECP that encompasses the entire Plan Area.

The NCCP conservation strategy is intended to provide for the conservation and management of Covered Species and to conserve habitat necessary to maintain the continued viability of biological communities impacted by human changes to the landscape. Under the NCCPA, the CDFW has sole responsibility for approving the NCCP and any future NCCP amendments, and sole authority and responsibility for permitting decisions based on the NCCP (except for permitting decisions by the CEC, as explained below).

The NCCP also establishes Plan-wide programs intended to conserve Covered Species and natural communities at the ecosystem scale, while accommodating Covered Activities and other compatible land uses. All Plan-wide DRECP programs are elements of the NCCP. CDFW's participation in the DRECP implementation structure will be for the purpose of informing its permitting decisions and regulatory actions under the Plan-wide NCCP,

ensuring that implementation of any subarea NCCPs developed under the DRECP and any project-specific Section 2835 take authorizations under the Plan-wide NCCP is coordinated with implementation of the LUPA and GCP, and supporting, participating in, and overseeing implementation of Plan-wide programs.

CEC Take Authorization Requirements

Under the Warren-Alquist Act, CEC has exclusive authority under California law to approve (license) energy facilities that are thermal power plants with a generating capacity of 50 MW or more, related facilities (e.g., natural gas pipelines, water lines, tanks, etc.), and certain electric transmission lines. This exclusive authority gives the CEC sole authority and responsibility for licensing decisions under California law, including the authority to authorize take in conformity with the terms of an approved NCCP without separate Section 2835 take authorizations from CDFW.

As a permittee under Section 10(a)(1)(b) of the ESA, the CEC will be responsible for complying with the terms and conditions of its federal incidental take permit, which will include a requirement to implement actions consistent with the GCP, and a requirement that any extension of incidental take authority to individual Covered Activities under CEC jurisdiction must be consistent with the GCP. The USFWS will oversee and enforce CEC's implementation of the permit's terms and conditions. CEC's participation in the DRECP implementation structure will be to inform its licensing decisions under its incidental take permit and the NCCP, and to support and participate in implementation of Plan-wide programs.

CSLC Take Authorization Requirements

As a permittee under Section 10(a)(1)(b) of the ESA and Section 2835 of the Fish and Game Code, the CSLC will be responsible for complying with the terms and conditions of both permits, which will include a requirement to implement actions consistent with the GCP and NCCP, and a requirement that any extension of incidental take authority for take resulting from project-level, site-specific Covered Activities on CSLC lands must be consistent with the GCP and NCCP. The USFWS and CDFW will enforce the terms and conditions of each take authorization. The CSLC's participation in the DRECP implementation structure will be to inform its leasing decisions under its incidental take authorizations, and to support and participate in implementation of Plan-wide programs.

II.3.1.5.2.3 DRECP Executive Policy Group

The DRECP Executive Policy Group will ensure coordination among DRECP plan participants regarding implementation of each of the planning components of the DRECP, oversee coordination among local, state and federal governments for all DRECP matters,

and provide policy-level support and oversight of implementation of Plan-wide programs. The California Governor's Office and the U.S. Department of the Interior will form the Executive Policy Group through a written agreement upon approval of the DRECP. The DRECP Executive Policy Group will replace the Renewable Energy Policy Group convened under the October 12, 2009, memorandum of understanding between the State of California and the Department of the Interior.

Membership of the Executive Policy Group

Members of the Executive Policy Group will include:

- A senior designee of the Governor.
- A senior designee of the Secretary of the Interior.
- The California Director of BLM.
- The Regional Director of USFWS.
- A CEC Commissioner.
- The Director of CDFW.
- The Executive Officer of CSLC.

If any public agency prepares a land use or natural resources plan that tiers from and will implement the DRECP, it will be invited to be a member of the Executive Policy Group once the plan is approved. In addition, if a local government enters into a Planning Agreement pursuant to the NCCPA to prepare a regional NCCP and apply for incidental take permits directly under the GCP that tier from and will implement the DRECP, it will be invited to be a member of the Executive Policy Group once the Planning Agreement takes effect.

Role of the Executive Policy Group

The Role of the Executive Policy Group will include:

- Policy oversight.
- Coordinating Plan participants regarding DRECP matters (renewable energy and implementation of conservation and mitigation actions).
- Resolution of agency conflicts and policy conflicts that arise from implementation.
- Providing a high-level forum for intergovernmental coordination and cooperation.

Function

The Executive Policy Group will determine the frequency, location and agendas for its meetings. However, the Executive Policy Group will likely meet at least twice per year during the first five years of implementation, and at least annually thereafter.

II.3.1.5.2.4 DRECP Coordination Group

The DRECP Coordination Group will be responsible for the day-to-day implementation of Plan-wide programs, coordination among Plan participants regarding implementation of each DRECP planning component (LUPA, GCP, and NCCP), coordination with public agencies and stakeholders, and public outreach.

The DRECP Coordination Group will be a new interagency and intergovernmental consortium in which the Plan participants collaborate to implement Plan-wide programs. The Coordination Group will not be a new or separate legal entity. Members of the Coordination Group will retain their current authorities and responsibilities. However, they will exercise their separate authorities, and use their staff and other resources, in a deliberate and coordinated way to implement the DRECP.

The Executive Policy Group will form the Coordination Group within six months after the DRECP is approved.

Membership of the Coordination Group

Membership in the Coordination Group will consist of one representative from each of the entities responsible for implementation of DRECP planning components. If local, state, or tribal governments develop regional NCCPs or HCPs that tier from the DRECP and/or receive regional incidental take permits directly under the NCCP or GCP, the new plan permitees will become members of the Coordination Group. The Coordination Group will initially consist of representatives of BLM, USFWS, CEC, CDFW, and CSLC.

If any public agency prepares a land use or natural resources plan, including but not limited to an HCP and NCCP that will tier from and will implement the DRECP, it will be invited to be a member of the Coordination Group once the plan is approved.

Role of the Coordination Group

Based on policies and priorities set by the DRECP Executive Policy Group, the Coordination Group will coordinate and oversee implementation of Plan-wide programs, including the following:

- Advising plan participants how the DRECP's programmatic, Plan-wide avoidance, minimization and mitigation measures will be applied and implemented to individual Covered Activities
- Reserve assembly and management
- Habitat restoration
- Plan-wide monitoring
- Plan-wide management including adaptive management
- Independent science input
- Data management, including updating databases and providing access to plan information
- Funding, including mitigation fee revenues, grant funding and other funding
- Public outreach
- Coordinating with military installations
- Coordinating with stakeholders
- Coordinating with existing conservation and management organizations
- Coordinating implementation of LUPA, GCP, NCCP, CEC Take Authorization, and CSLC Take Authorizations
- Ensuring permit streamlining consistent with DRECP
- Ensuring adequate progress toward implementation of Plan-wide program elements and achieving DRECP BGOs
- Establishing priorities for implementation of Plan-wide program elements
- Determining whether DRECP amendments should be proposed for formal review under the FLPMA, the ESA, or the NCCPA
- Coordinating consultation with tribes

Coordination with Local Governments

The Coordination Group will coordinate with local governments regarding DRECP actions proposed for implementation within the local governments' jurisdiction.

Administration of the Coordination Group

The DRECP Coordination Group must have the capacity and resources to carry out its role. The Coordination Group will have use of an office and support staff. Coordination Group staff will consist of employees of its member agencies assigned to the

Coordination Group, and consultants retained by member agencies to support the Coordination Group as needed.

Program Manager

A Program Manager will report to the Coordination Group and act in accordance with the Coordination Group's direction. The Program Manager will oversee the work of Coordination Group staff, and will manage, coordinate, oversee and report on all aspects of implementation of Plan-wide program elements. The Program Manager will not have supervisorial authority over any staff that are employees of a Coordination Group member agency. However, the Program Manager will coordinate their efforts to implement Plan-wide programs.

The Program Manager will manage and monitor implementation of Plan-wide program elements; oversee the preparation of annual and 5-year work plans, budgets, and reports; and implement public outreach programs. The Program Manager will also coordinate and provide administrative support to the Adaptive Management Team, the Partners Working Group, and the Stakeholder Working Group.

Preparing Annual Work Plans and Budgets and Managing Expenditures

Each year, the Program Manager will prepare an Annual Work Plan and Budget and a 5-Year Budget. The Annual Work Plan and Budget will address matters related to general program administration and implementation of Plan-wide elements. The Program Manager will establish systems and processes to centralize oversight of implementation budgets and expenditures of funds consistent with federal and state laws governing the holding and use of federal and state funds.

Contracting for Services

One or more of the Coordination Group's member agencies, in coordination with other member agencies, may contract for services with public or private entities as necessary or appropriate to implement Plan-wide programs, in a manner consistent with state and/or federal law governing such contracts. Such contracts may be for a range of professional services, including those related to:

- Acquisition and protection of habitat.
- Habitat restoration and management.
- Monitoring and scientific research.
- Environmental and technical services.
- Data management.

The Program Manager will assist the contracting member agency in its administration of any such contracts, as requested by that agency.

Securing, Holding, and Managing Funds to Support Implementation Actions

The Coordination Group will seek to secure adequate funding to implement Plan-wide program elements from state, federal and other sources, as well as from implementation fee revenues. Where appropriate and consistent with federal and state laws governing the holding and use of federal and state funds, the Coordination Group will seek the support of one or more Supporting Entities to serve as a fiscal agent. The Program Manager will coordinate with the fiscal agent to ensure that sufficient funds are available to implement Annual Work Plans.

Regulatory Compliance for Implementation of Conservation Actions

The Coordination Group will be responsible for ensuring that any regulatory authorizations necessary to implement actions under Plan-wide program elements are obtained. For example, a regulatory authorization could be required under the Federal Clean Water Act for wetland or riparian restoration actions. One or more of the Coordination Group's member agencies will serve as the lead agency(ies) for purposes of obtaining regulatory authorizations. The lead agency will identify and prepare the necessary documentation to support the issuance of such regulatory authorizations, in coordination with the Program Manager and other applicable plan participants.

Adaptive Management Team

The Coordination Group will implement the DRECP MAMP after receiving and considering the advice and recommendations of an Adaptive Management Team. The Adaptive Management Team will have primary responsibility for developing and recommending to the Coordination Group MAMP monitoring protocols and standards and for reviewing and analyzing MAMP monitoring data and reports, including effectiveness monitoring and validation monitoring. The Adaptive Management Team will also review and analyze relevant new scientific information regarding Covered Species and natural communities, such as new baseline species surveys, new vegetation mapping, and new scientific research. Based on monitoring data and reports, and other new scientific information, the Adaptive Management Team will provide input to the Coordination Group regarding implementation of the MAMP, including but not limited to developing and recommending appropriate adaptive management actions. The Adaptive Management Team will also advise the Coordination Group when and for what purpose independent scientific review or study would be most useful for implementing the MAMP. The Adaptive Management Team will address technical and scientific issues, not policy issues.

The Adaptive Management Team may assist with, but will not be responsible for, compliance monitoring or project-level monitoring. Compliance monitoring and project-level monitoring will be carried out by each permittee (i.e., each entity, including CEC and CSLC, that receives a take permit under the GCP or NCCP for a Covered Activity) or ROW holder (i.e., each entity that receives that receives a grant of ROW from BLM for a Covered Activity) in accordance with the terms and conditions of its permit(s) or ROW grant. The Adaptive Management Team may also assist with land use plan monitoring, but BLM will retain primary responsibility for monitoring implementation of its land use plans. BLM and the Adaptive Management Team will coordinately closely regarding BLM's monitoring of its land use plans and MAMP effectiveness monitoring for purposes of measuring progress toward achieving the BGOs.

Adaptive Management Team Membership

The Adaptive Management Team members will include representatives from CDFW, USFWS, BLM, CEC, CSLC, USGS, the National Park Service and California Department of Parks and Recreation. When it would supplement the expertise or experience of the Adaptive Management Team, the Coordination Group may also invite qualified representatives of other public agencies and private organizations as members. All members of the Adaptive Management Team will have expertise in biology or other relevant field of science.

Adaptive Management Team Operation

The Adaptive Management Team may invite individuals, or convene subteams consisting of individuals who are not members of the Team, to provide input into specific technical or scientific MAMP implementation issues. These individuals or subteams may be from the technical staffs of Adaptive Management Team members or other entities or institutions, as deemed appropriate by the Team. The Adaptive Management Team will also ensure that the Science Subgroup of the Stakeholder Working Group is afforded an opportunity to provide input into MAMP implementation.

The Program Manager may ask the Adaptive Management Team to provide scientific review of specific technical issues related to implementation of the MAMP or implementation of the DRECP conservation strategy, regardless of whether such review is specifically required by the MAMP. At least once every three years, the Adaptive Management Team will also assess the overall efficacy of the MAMP and provide recommendations to the Coordination Group regarding whether revisions to the MAMP would improve its effectiveness.

Public Agency Working Group

The Program Manager will form a Public Agency Working Group to coordinate implementation of DRECP planning components and Plan-wide program elements with public agencies with lands, programs, facilities or regulatory jurisdiction in the desert and will seek input regarding DRECP implementation. DRECP implementation will complement, overlap with, or affect activities implemented by several public agencies. The Public Agency Working Group is intended to provide a partnership structure in which public agencies and the Coordination Group can coordinate such activities.

The Public Agency Working Group will select two chairs. The Program Manager, working with the chairs, will establish the frequency, location and agendas for Public Agency Working Group meetings.

Governments and government agencies that will be invited to participate in the Public Agency Working Group will include:

- Local governments
- Military Bases
- California Public Utilities Commission
- National Park Service
- Tribal Governments[4]
- California Department of Parks and Recreation
- United States Geological Survey
- California Department of Conservation
- United States Army Corps of Engineers
- California Independent System Operator
- Lahontan Regional Water Quality Control Board
- U.S. Environmental Protection Agency

The Public Agency Working Group may address a range of land and resource management and other issues, including but not limited to DRECP implementation issues. In addition to making recommendations regarding DRECP implementation actions, the Public Agency

[4] Tribal governments will be invited to participate for purposes of informal coordination and consultation regarding DRECP implementation. Participation in the Public Agency Working Group would be in addition to, and not in place of, formal tribal consultations required under State or federal law.

Working Group may elect to develop proposals or recommendations regarding other related land and resource management activities of any of its member agencies and provide the proposals or recommendations to the appropriate member agency(ies). The Public Agency Working Group may be used to address any land management issues in or adjacent to the Plan Area that are related to DRECP.

The Partners Working Group may provide input regarding DRECP implementation that reflects differing views within the Working Group.

Stakeholder Working Group

The Program Manager will form a Stakeholder Working Group to provide input regarding DRECP implementation. The Stakeholder Working Group will select two chairs. The Program Manager, working with the chairs of the Stakeholder Working Group, will establish the frequency, location, and agendas for Stakeholder Working Group meetings. The Stakeholder Working Group will include of representatives of:

- The general public within desert communities
- Solar energy industry
- Wind energy industry
- Geothermal energy industry
- Environmental organizations
- Motorized recreation
- Non-motorized recreation
- Utilities
- Non-profit conservation organizations, including land trusts, that own land in the desert

The Stakeholder Working Group may provide input regarding DRECP implementation that reflects differing views within the Working Group.

Stakeholder Science Subgroup

The Stakeholder Working Group will include a Stakeholder Science Subgroup to provide an opportunity for stakeholder scientists and technical experts to provide scientific input to the Coordination Group regarding DRECP implementation. Membership in the Science Subgroup will be determined by the Stakeholder Working Group. All Science Subgroup members must have expertise in biology or other relevant field of science, or appropriate technical expertise.

Other Working Groups

The Coordination Group will form other working groups as needed to inform DRECP implementation.

Community Outreach and Public Information

The Coordination Group will conduct community outreach to inform and engage local communities in the desert regarding implementation of Plan-wide programs and will make information available to the public at large, through a DRECP website and other appropriate means, regarding the DRECP. The DRECP website will include a data portal that will provide various datasets, including static maps and dynamic, and interactive mapping tools that support the adaptive management component of the MAMP (see Section II.3.1.3.5.2).

Supporting Entities

The Coordination Group may request other entities, "Supporting Entities," to perform certain implementation tasks, where such entities have the authority, resources, expertise, and willingness to successfully undertake and complete the task. Tasks that could be implemented at least in part by Supporting Entities include reserve management, land acquisition, habitat restoration, monitoring, and data management. Supporting Entities may include, among others:

- The National Fish and Wildlife Foundation
- Non-profit conservation organizations, including land trusts, that own property in the desert
- Desert tortoise recovery implementation teams
- Flat-tailed horned lizard management team

Independent Science Input

The Coordination Group will arrange for independent science input to address scientific uncertainties regarding the implementation of Plan-wide programs. The Coordination Group will seek input from the Adaptive Management Team, Public Agency Working Group and Stakeholder Working Group regarding the scope and use of independent science input.

DRECP Modifications and Amendments

The Coordination Group will review, and in some cases may propose, modifications or amendments to the DRECP. An amendment is a change to the DRECP that requires a formal amendment to the NCCP or the GCP, or permits issued under the NCCP or GCP, or a formal

LUPA amendment. A modification is a change to the DRECP that does not require a formal amendment. The Public Agency Working Group and the Stakeholder Working Group may also propose DRECP modifications and amendments. Modifications and amendments are briefly described here and discussed in greater detail in Section II.3.1.5.8.

Modifications and amendments to the DRECP are expected to occur over the course of the plan term. Participation by counties or other local or state agencies will be encouraged and could lead to the development of tiered HCPs and NCCPs that would implement the DRECP, which would in some cases require amendments to the GCP and the NCCP. Changes in renewable energy development technology could also lead to DRECP modifications or amendments. For example, based on new designs for wind turbines or solar facilities that reduce impacts to Covered Species, avoidance and minimization measures may need to be revised. Any such modifications and amendments would be consistent with the DRECP BGOs.

Proposed Modifications

The Coordination Group may make minor modifications to the DRECP. Where the Adaptive Management Team, Partners Working Group, or Stakeholder Working Group proposes a modification to the DRECP, the Coordination Group will review the proposal and decide what action, if any, should be taken based on the proposal.

Proposed Amendments

The Coordination Group may propose DRECP amendments to the DRECP Executive Policy Group for consideration. Before it submits a proposed amendment to the Executive Policy Group, it will seek input regarding the amendment from the Public Agency Working Group and the Stakeholder Working Group and will include a summary of the input received with its proposal. If the Coordination Group determines that the proposed amendment raises a scientific issue, it will also seek input from the Adaptive Management Team and will include a summary of its input with the proposal.

If the Public Agency Working Group proposes a DRECP amendment, the Coordinating Group will seek input from the Stakeholder Working Group. Likewise, if the Stakeholder Working Group proposes a DRECP amendment, the Coordinating Group will seek input from the Public Agency Working Group. If the Coordination Group determines that a proposed amendment raises a scientific issue, it will also seek input from the Adaptive Management Team. Based on the input it receives, and on its independent evaluation of the proposed amendment, the Coordination Group will provide a recommendation to the Executive Policy Group regarding what action to take with regard to the proposed amendment. The Coordination Group will include a summary of the input received with its recommendation. The Executive Policy Group will decide whether to initiate a formal

amendment process under the Federal Land Management and Policy Act, the ESA, or the NCCPA based on the proposal after reviewing and considering the Coordination Group's recommendation. While the Coordination Group and the Executive Policy Group will make recommendations regarding proposed amendments, the final decision on any proposed amendment, as well as the final decision about whether a proposed change is an amendment or a modification, will be made by the agency or agencies with authority to make that decision under applicable laws and regulations (e.g., NCCP, GCP, or LUPA).

Take Authorizations

This section applies only to modifications and amendments of the DRECP itself (i.e., the NCCP, the GCP, or the LUPA). It does not apply to modifications or amendments of take authorizations issued under Section 10 of the ESA or under the NCCPA. Modifications and amendments of such take authorizations may only be proposed by, and must be approved by, the applicable permittee, the USFWS, and CDFW.

II.3.1.5.2.5 Tribal Consultation

Tribal governments have a special status under both state and federal law. Because the Coordination Group will not be a new or separate legal entity, members of the Coordination Group will retain their current authorities and responsibilities for tribal consultations. However, the Coordination Group will coordinate timely state and federal consultations on DRECP implementation issues with tribal governments in accordance with state and federal law and policy.

II.3.1.5.2.6 Partnership with Local Governments

The Executive Policy Group and the Coordination Group will encourage counties and other local governments to refer to the DRECP to inform local land use planning and to rely on the NCCP and GCP for state and federal take authorizations. The Executive Policy Group and Coordination group will also welcome coordination among local, state and federal permitting agencies regarding renewable energy and transmission projects covered by the DRECP and actions to conserve DRECP Covered Species. The DRECP will not affect local governments' land use authority; local governments will continue to have land use authority over most renewable energy projects on private land. Consequently, local governments will usually be the CEQA lead agencies for such projects and will usually have the ultimate authority to approve or disapprove them. Coordination with local governments will therefore be important to the success of the DRECP.

There are four general ways that local governments can participate in the implementation of the DRECP. Local governments could participate in more than one of these ways.

Informal Participation

The Executive Policy Group and the Coordination Group will welcome informal collaboration with local governments regarding DRECP implementation, local land use planning, and permitting for renewable energy projects. Regardless of whether a local government participates in one of the DRECP advisory committees, it could provide input to the Executive Policy Group and Coordination Group about specific implementation issues relevant to the local government.

Formal Coordination Role

As described above, the DRECP will establish the Public Agency Working Group to create established roles for government agencies to provide input into, and to coordinate their efforts with, DRECP implementation. Local governments can become a member of the Public Agency Working Group.

Permittee/Plan Participant

Local governments can apply for take authorizations under the GCP and NCCP for DRECP Covered Activities (renewable energy development and transmission projects covered by the DRECP) within the local government's jurisdiction. Local government(s) would apply to the CDFW for a take authorization under the NCCP and to USFWS for a take authorization under the GCP. Applications that are consistent with the NCCP's and GCP's terms and conditions would require little additional analysis and planning compared to what is ordinarily required to develop a regional NCCP or HCP. By adopting the NCCP's and GCP's terms and conditions, local governments would benefit from a significantly streamlined permitting process for obtaining take authorizations.

The NCCP and GCP take authorizations would allow the local government itself to extend take authorization to Covered Activities under the terms of the NCCP and GCP when the local government approves such activities. To obtain the permits, the local government would have to agree to require covered renewable energy projects to incorporate the avoidance, minimization and mitigation measures laid out in the DRECP. However, the local government would not have to prepare a separate habitat conservation plan or natural community conservation plan. The local government would be invited to join the Executive Policy Group and the DRECP Coordination Group.

Permittee/Lead Implementing Entity

After the DRECP is finalized, a local government could elect to prepare its own NCCP and HCP that tiers from the DRECP. Under this alternative, the local government would have flexibility to prepare a plan that covers not just renewable energy projects, but also other

private development and public infrastructure projects. The local government would also have flexibility to define appropriate development areas for renewable energy projects and appropriate conservation areas for species covered by the DRECP, provided the local government's plan is consistent with the DRECP's biological goals and objectives and mitigation requirements (i.e., that it tiers from the DRECP.)

If any local government enters into a joint planning agreement with CDFW and the USFWS to prepare such a regional NCCP and apply for incidental take permits directly under the GCP that tier from and will implement the DRECP, HCP, it will be invited to be a member of the DRECP Executive Policy Group upon the date the planning agreement takes effect. If any local government completes a regional NCCP and application for incidental take permits directly under the GCP,, it will be invited to be a member of the DRECP Coordination Group upon approval of the regional NCCP and incidental take permits. In addition, where a regional NCCP and incidental take permits are approved, it would likely become the primary vehicle for DRECP implementation within that NCCP and incidental take permits plan/permit area. NCCPs and incidental take permits that tier from the DRECP would contribute to implementing applicable DRECP BGOs within each NCCP and incidental take permits plan/permit area using local implementation structures and programs. These local implementation structures and programs would reduce the Executive Policy Group's and Coordination Group's role within the NCCP and incidental take permits plan/permit area accordingly.

A comprehensive regional NCCP and incidental take permits directly under the GCP tiered from and implementing the DRECP could cover a range of activities within the local government's jurisdiction, including but not limited to renewable energy projects. The tiered plan could be based on the GCP and NCCP, but it would have to include additional analysis, and additional minimization and mitigation measures, to address the impacts of new covered activities that are not included within DRECP Covered Activities. The local government(s) could propose modifications to the boundaries of DFAs or the reserve design within the tiered NCCP and incidental take permits planning boundary, but any such modifications would have to be consistent with the DRECP's Plan-wide BGOs and other applicable ESA and NCCPA requirements. This form of regional NCCP and incidental take permits would likely require an amendment to the DRECP GCP and NCCP.

Use of the DRECP for Local Land Use Planning

Instead of or in addition to participating directly in the implementation of the DRECP, local governments could choose to use the DRECP for other purposes, such as developing land use plans or policies, developing local requirements for renewable energy projects, identifying conservation priorities, identifying sensitive habitat areas, or identifying

appropriate mitigation areas for the impacts of locally approved projects. The Coordination Group will advise and assist local governments that seek to use the DRECP in these ways.

Coordination Between BLM and Local Governments

The BLM is committed to coordinating with local governments throughout its land use plan amendment process. Once the ROD for the LUPA has been signed, the BLM will continue to partner with interested local governments in the implementation of the LUPA. For those local governments that sign a planning agreement to develop a tiered regional NCCP and HCP, the BLM may participate in the NCCP/HCP process. As part of its ongoing evaluation of its plans under Section V of the BLM Land Use Planning Handbook, the BLM will consider whether adjustments to the LUPA are necessary based on tiered NCCP/HCP processes while ensuring consistency with the BGOs of the DRECP.

II.3.1.5.3 Integrated Project Proposal Review Process

The DRECP is designed to provide a comprehensive conservation and mitigation program for Covered Species and a permitting program for state and federal take authorizations for Covered Activities that integrates the requirements of the LUPA, the GCP and the NCCP. The DRECP does not supplant existing statutory requirements or regulatory permitting process. For activities proposed on BLM lands, regulatory ROW grant process will continue to apply; for activities under the CEC's licensing authority, the CEC's licensing process will continue to apply; and for activities proposed on CSLC lands, the CSLC's leasing process will continue to apply. Likewise, for Covered Activities that are within the land use authority or other discretionary authority of local governments or state or federal agencies, existing review and approval process and requirements will remain in effect. The DRECP is designed to provide an integrated federal and state permitting process for take authorizations for Covered Species from Covered Activities that can be integrated with existing federal, state, and local project review and approval and permitting process. By providing an integrated permitting process, the DRECP is intended to make the substantive requirements for federal and state take authorizations for Covered Activities consistent and predictable and to make the process for obtaining them more efficient.

This section explains how federal and state agencies will coordinate their review of Covered Activities, how the integrated project proposal review process will work, and what information the integrated project proposal requires. This section will also explain the requirement to consult with appropriate military representatives regarding potential conflicts with military operations, training and testing.

II.3.1.5.3.1 Agency Coordination

The USFWS, BLM, CDFW, CEC, and CSLC will coordinate their environmental review of individual Covered Activities to make the process of obtaining federal and state take authorizations for individual Covered Activities more efficient and to ensure that the requirements for such take authorizations are consistent and predictable. If other federal, state, or local agencies obtain federal and state take authorizations under the DRECP, or develop NCCPs or HCPs that tier from the DRECP, those agencies will also be expected to coordinate their environmental review of Covered Activities under the DRECP. Participating in the DRECP integrated project proposal review process will not diminish the discretionary authority of any participating agency; each agency will retain its statutory responsibilities and authorities. However, to provide an integrated process for federal and state take authorizations for individual Covered Activities, participating agencies must coordinate their environmental review and regulatory actions (i.e., BLM ROW approval, CEC licensing, CSLC leasing, etc.).

The USFWS, BLM, CDFW, CEC, and CSLC, and any other federal, state, or local agencies that become DRECP participating agencies, will coordinate the environmental review and regulatory actions for Covered Activities by engaging the Coordination Group. Participating agencies will require proponents of Covered Activities under the agencies' authority to complete a DRECP integrated project proposal (see below). Only one integrated project proposal will be required for each proposed Covered Activity. For example, if a Covered Activity that does not fall under CEC or CSLC authority is proposed on nonfederal public land or private land, one integrated project proposal could be submitted to the USFWS and CDFW to obtain a federal incidental take permit for Covered Species under the GCP and a state take authorization for Covered Species under the NCCP.

The participating agencies with authority over a proposed Covered Activity will seek input from the Coordination Group about whether the project proposal submitted for the proposed Covered Activity fulfills DRECP requirements and whether the Covered Activity, as proposed, accurately and adequately incorporates applicable DRECP CMA's for Covered Species.

Each participating agency will determine independently, and in accordance with the agency's statutory authorities and responsibilities, what regulatory action to take with regard to a proposed Covered Activities under its authority. However, each participating agency will consider the Coordination Group's input during the agency's environmental review of the proposed Covered Activity and will coordinate directly with any other participating agency with authority over the Activity to ensure that the requirements for federal and state take authorizations are consistent and are not duplicative. For example, BLM and CDFW will coordinate directly regarding Covered Activities that are proposed on

BLM lands and do not fall within CEC jurisdiction, and will provide joint guidance to the proponent of the Activity about DRECP project proposal requirements and the requirements of DRECP CMAs for Covered Species.

II.3.1.5.3.2 Role of Integrated Project Proposal for Federal Take Authorization for Covered Activities on BLM Lands

Covered Activities on BLM lands would receive take authorizations for federally listed species under a biological opinion and incidental take statement issued to BLM by the USFWS in accordance with Section 7(a)(2) of ESA. The USFWS would issue the biological opinion and incidental take statement pursuant to Section 7 of ESA, and take coverage would be provided to Covered Activities under the exemption from ESA's take prohibition provided by the incidental take statement. For Covered Activities proposed on BLM lands, the DRECP integrated project proposal will be used by BLM to determine whether a proposed Covered Activity meets applicable land use plan requirements for Covered Species and is consistent with the biological opinion and incidental take statement for the LUPA.

II.3.1.5.3.3 Avoiding Conflicts with Military Operations, Training, and Testing

The Department of Defense has provided a matrix identifying potential military operational constraints that could result from the construction and operation of Covered Activities within DFAs. The matrix identifies potential constraints by renewable energy technology and is accompanied by several maps with color codes that depict the extent of the potential constraint on military operations (see Appendix J).

Red areas on the maps represent locations where there is a <u>significant likelihood of an unacceptable risk</u> to national security, and the technology identified might impact military operations, testing, and training.

Orange areas represent locations where there is a <u>likelihood of an unacceptable risk</u> to national security, and the technology identified might impact military operations, testing, and training.

Yellow areas represent locations where there is <u>some likelihood of an unacceptable risk</u> to national security, but the technology identified probably will not impact military operations, testing, and training.

In order to use the DRECP's integrated process and to obtain federal or state take authorizations under the DRECP, proponents of Covered Activities must first consult with appropriate representatives of the Department of Defense to ensure the proposed Covered

Activity will not cause an unacceptable risk to national security. Specifically, the following process will be implemented:

- For Covered Activities proposed in red areas, the DRECP integrated project proposal review process and federal and state take authorizations under the DRECP will not be available unless a letter is obtained from the Department of Defense Siting Clearinghouse stating that military impacts have been mitigated.
- For Covered Activities proposed in orange or yellow areas, the DRECP integrated project proposal review process and federal and state take authorizations under the DRECP will be not be available until Department of Defense representatives at the regional level have been consulted and have been provided a minimum of 30 days to assess potential mission impacts. If the regional representatives conclude within the 30 day period that there is a significant possibility that a proposed Covered Activity presents an unacceptable risk to national security, the proposed Covered Activity cannot use the DRECP integrated project proposal review process or obtain federal and state take authorizations under the DRECP unless a letter is obtained from the Department of Defense Siting Clearinghouse stating that military impacts have been mitigated.

II.3.1.5.3.4 DRECP Integrated Project Proposal Submittal and Review Process

To facilitate streamlining under the DRECP, applicants may submit a Project Proposal to the DRECP Coordination Group for an early, informal review for consistency with DRECP requirements. The Project Proposal will identify all relevant project information and review requirements recognizing that not all project information can be assembled and not all review requirements can be met at the Project Proposal stage. Identification of such information and requirements at the Project Proposal stage will ensure that both applicants and reviewing agencies fully understand the project and relevant DRECP requirements at an early stage in the process.

The DRECP Coordination Group will provide an initial assessment regarding the Project Proposal's consistency and, if necessary, identify any revisions or additions needed for consistency with DRECP requirements. The Coordination Group will also work with applicants to ensure they have access to the most current, available DRECP data resources. Where the Coordination Group has initially assessed a Project Proposal and concluded that it is consistent with DRECP requirements, an Application submitted to the appropriate permitting/approval agencies that is consistent with the Project Proposal will benefit from the specific DRECP streamlining timeframes described below.

Project Proposal Information

General Project Information

The Project Proposal must include at least the following components:

- Project applicant information
- Project type and brief project description
- Project location, including county, ecoregion subarea, APNs, and/or legal description
- Map of the project location
- Map of the project site
- Site ownership (e.g., private, BLM, etc.)
- Project size, including proposed development footprint acreage
- Project schedule

For projects within DOD pre-review areas, as identified in the DRECP, Project Proposals must include evidence of the completed pre-review by DOD (see Section II.3.1.5.3.3 and Appendix J).

General Setting and Existing Conditions

The Project Proposal must include a general description of the existing project setting and physical conditions, including at least the following:

- Physical setting (e.g., topography, major rivers or drainages, etc.)
- Existing or authorized land uses
- Known or potential biological resources in the project vicinity
- Identification of DRECP-specific requirements and status, as shown in Exhibit II.3-9, Tables 1–8)
- Identification of Agency-specific application requirements and status (e.g., BLM [Plan of Development], CEC specific requirements, CSLC, CDFW)

This general information will be available on the DRECP data portal. The data portal will house and manage all pertinent spatial data sets and will be regularly updated to provide current content. The portal will be easily accessible to users and will provide users with the ability to create customized maps.

Review of DRECP Project Planning Guidelines

The DRECP data portal will include information regarding applicable DRECP-specific requirements such as BGOs, CMAs and compensatory measures. The available information will also include the environmental studies requirements. This information will be included in the Project Proposal.

Project-Level Studies

Based on the DRECP project planning guidelines and requirements for the project site, the Project Proposal must report the status and/or results of all project-level studies required for the site, including biological studies (e.g., habitat assessment, vegetation mapping, focused species surveys, etc.). The Project Proposal must describe how the studies do or will meet the requirements of the DRECP CMAs (e.g., wetland delineations to support avoidance and minimization of wetland and riparian resources). (See Appendix C for the BGOs, Section II.3.1.2.5 for the biological CMAs, and Appendix H for additional information related to the biological CMAs.)

It is understood that not all project-level studies will be complete at the Project Proposal stage. For example, for projects on BLM lands, applicants may not be provided with access to lands for project-level studies until a formal application process with BLM is underway. The purpose of including information on project level studies in the Project Proposal is to provide opportunity for review of studies that may have been completed and to ensure a common understanding of project-level study requirements and details.

Project Proposal Review Process

The Coordination Group will be available to work with applicants before the Project Proposal is submitted to provide guidance regarding available DRECP data resources, required information for the Project Proposal, required technical studies, and other information. The DRECP Program Manager will be available to applicants during this time period and may assist project applicants in navigating the DRECP Project Proposal and review process. Interaction before the Project Proposal is submitted is intended to assist both the applicant and the Coordination Group in assembling complete and comprehensive submittals that will facilitate review of Project Proposals.

Within 30 days of submittal of a Project Proposal, the Coordination Group will provide feedback to the project applicant regarding the completeness of the submittal, including the impact analysis and consistency analysis. If additional information is required for review of the Project Proposal, the Coordination Group will provide a description of the required materials and will work with applicants to modify the Project Proposal as needed.

Within 30 days of receipt of any needed additional information described by the Coordination Group, the Coordination Group will complete review of the Project Proposal with respect to:

- Adequacy and completeness of the information included in the Project Proposal.
- Initial feedback on consistency of the proposed Covered Activities with the DRECP based on information included in the Project Proposal.
- Recommendations, if appropriate, for project revisions that would result in greater consistency with the DRECP.

The Coordination Group will provide the results of its evaluation in writing to the project applicant.

Upon completion of review by the Coordination Group, the project applicant may use the Project Proposal and results of the Coordination Group evaluation to prepare and submit an application to the agency responsible for issuing the permit or authorization for the proposed Covered Activity. The agency/entity responsible for issuing permits or authorizations for the Covered Activity will have final responsibility for determining whether the Covered Activity meets the requirements for the permit or authorization based on applicable laws and regulations.

A Project Proposal that has completed the Coordination Group review process, and received initial positive assessment regarding consistency with the DRECP, will be eligible for expedited review from DRECP participating agencies, BLM, USFWS, CDFW, CEC and/or CSLC, as applicable.

Such agencies will review and take action with regard to submitted applications that are consistent with such Project Proposals within one year following the determination by the approval agency that the application is complete. Any additional project-level studies or CEQA/NEPA environmental review would have to be completed within this one year period. Projects initially found to be consistent with the DRECP but requiring technical studies extending for more than one year (e.g., 2-year eagle studies) would have an extended review period as needed to complete the study(ies).

II.3.1.5.4 Summary Submittal and Review Process for Projects Seeking Streamlining Under DRECP Including Required Avoidance, Minimization, and Mitigation Requirements

Section II.3.1.5.3 describes the integrated Project Proposal submittal and review process including the role of the DRECP Coordination Group during initial assessment of Project Proposals for consistency with the DRECP. The integrated Project Proposal process concludes with completion of initial assessment by the DRECP Coordination Group after

which the applicant has the option of submitting a project application to the agency/entity with permit authority over the project and processing the application in accordance with agency-specific requirements.

Projects initially assessed as consistent with the DRECP during the integrated Project Proposal process and seeking streamlining under the DRECP would be required to comply with DRECP avoidance, minimization and mitigation requirements as expressed in the DRECP CMAs. DRECP biological and nonbiological CMAs apply during all stages of a project including:

- Pre-siting and design (due diligence)
- Siting and design
- Construction and post-construction.

Biological CMAs are presented in their entirety in Section II.3.1.2.5, and nonbiological CMAs are presented in Section II.3.2.3 and Appendix L.

Exhibit II.3-9 provides a road map summarizing the submittal and review process for projects seeking streamlining under DRECP. The road map is keyed to the project stages noted above and identifies the applicable CMAs during each project stage. Each CMA is given an index number and short name in the exhibit to highlight the particular resource or requirement addressed in the CMA.

The road map references biological CMAs that apply to all projects and nonbiological CMAs applicable to projects on BLM-administered lands. Certain CMAs are standard practices that would apply to all projects while others are resource-specific, linked directly to the presence and distribution of resources on a particular project site.

As previously described, the project submittal and review process commences with accessing the DRECP data base to assess the presence and distribution of resources present on the project site. Available DRECP data will mostly likely be augmented by site-specific data assembled by individual project applicants. The DRECP data portal is a valuable tool that will enable applicants to assess project constraints and opportunities at a very early stage in the due diligence process and understand at the outset the full range of project requirements as well as potential benefits afforded by streamlining under the DRECP.

Exhibit II.3-9 Summary Submittal and Review Process for Projects Seeking Streamlining Under DRECP Including Required Avoidance, Minimization, and Mitigation Requirements

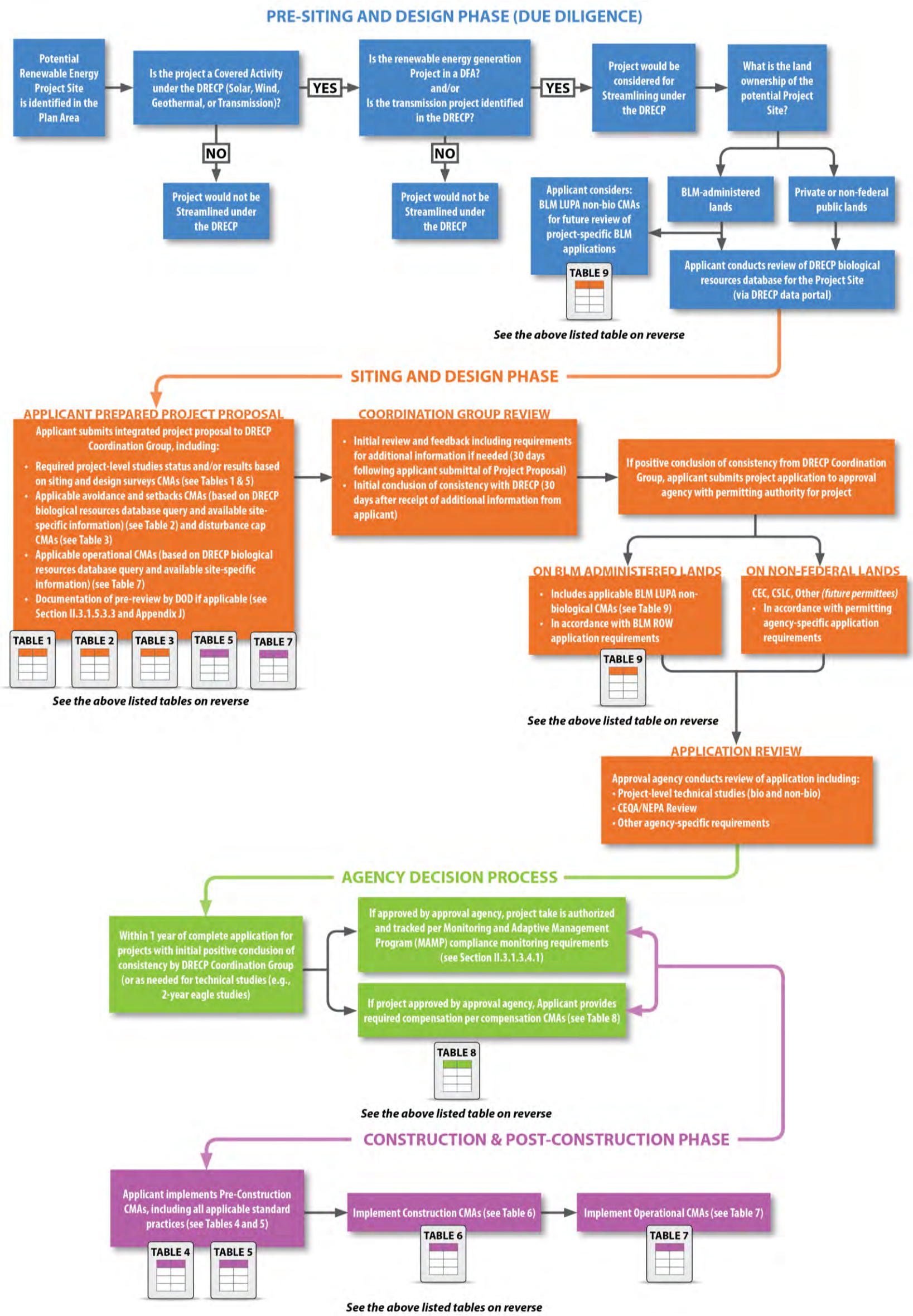

TABLE 1: Siting and Design Surveys

CMA NUMBER	CMA NAME
AM-PW-1	Survey Requirements and Standards
AM-DFA-DUNE-2	Mojave Fringe-toed Lizard Detailed Sand Mapping
AM-DFA-ONC-1	Other Natural Communities Species Specific Mapping/ Surveying
AM-DFA-AG-1	Agricultural Lands Species Surveys - Swainson's Hawk Protocol Surveys
AM-DFA-PLANT-1	Plant Protocol Surveys
AM-DFA-ICS-1	Individual Covered Species Surveys - Flat-tailed horned lizard
AM-DFA-ICS-37	Mohave Ground Squirrel Protocol Surveys

TABLE 2: Avoidance and Setbacks CMAs

CMA NUMBER	CMA NAME
AM-DFA-RIPWET-1	Riparian and Wetland Avoidance and Setbacks
AM-DFA-RIPWET-3	Riparian and Wetland Bird Setback or Survey
AM-DFA-RIPWET-5	Tricolored Blackbird Seasonal Setback
AM-DFA-RIPWET-6	Fish Setback
AM-DFA-RIPWET-8	Tehachapi Slender Salamander Surveys and Avoidance
AM-DFA-DUNE-1	Dune Avoidance
AM-DFA-AG-2	Agricultural Lands Species Setbacks - Burrowing Owl and Swainson's Hawk
AM-DFA-AG-3	Burrowing Owl Biological Monitoring
AM-DFA-AG-6	Greater Sandhill Crane Avoidance
AM-DFA-BAT-1	Bat Avoidance and Setbacks
AM-DFA-PLANT-2	Plant Avoidance and Setback
AM-DFA-ICS-2	Individual Covered Species Setbacks - Bendire's Thrasher, California Condor, Gila Woodpecker, Golden Eagle
AM-DFA-ICS-5	Desert Tortoise Conservation Areas and Linkages Avoidance
AM-DFA-ICS-26	Golden Eagle Recreational Setback and Closures
AM-DFA-ICS-39	Mohave Ground Squirrel Suitable Habitat Disturbance
AM-DFA-ICS-43	Implementing Entity Requirements - Mohave Ground Squirrel Data Gap Baseline Studies

TABLE 3: Disturbance Cap CMAs

CMA NUMBER	CMA NAME
AM-DFA-PLANT-3	Plant Suitable Habitat Impact Caps - Bakersfield cactus, triple-ribbed milk-vetch, and Alkali Mariposa Lily
AM-DFA-ICS-27	Golden Eagle Habitat Disturbance Cap

TABLE 4: Pre-Construction CMAs

CMA NUMBER	CMA NAME
AM-DFA-DUNE-3	Mojave Fringe-toed Lizard Clearance Surveys
AM-DFA-AG-1	Agricultural Lands Species Surveys - Burrowing Owl Clearance Surveys and Breeding Season Surveys
AM-DFA-AG-4	Burrowing Owl Burrow Exclusion
AM-DFA-AG-5	Burrowing Owl Translocation
AM-DFA-ICS-1	Individual Covered Species Surveys - Desert Tortoise Moderate Requirement Areas, Bendire's Thrasher, Golden Eagle, Mohave Ground Squirrel
AM-DFA-ICS-3	Desert Tortoise Clearance Survey and Translocation
AM-DFA-ICS-11	Desert Tortoise Clearance Survey and Translocation
AM-DFA-ICS-28	Golden Eagle Pre-Project Surveys
AM-DFA-ICS-29	Golden Eagle Pre-Construction Risk Assessment Surveys
AM-DFA-ICS-36	Mohave Ground Squirrel Clearance Surveys
AM-DFA-ICS-28	Golden Eagle Pre-Project Surveys
AM-DFA-ICS-29	Golden Eagle Pre-Construction Risk Assessment Surveys
AM-DFA-ICS-3	Desert Tortoise Clearance Survey and Translocation
AM-DFA-ICS-36	Mohave Ground Squirrel Clearance Surveys

TABLE 5: Siting and Design/Pre-Construction Standard Practices CMAs

CMA NUMBER	CMA NAME
AM-PW-3	Resource Setback Standards
AM-PW-4	Seasonal Restrictions
AM-PW-6	Subsidized Predators Standards
AM-PW-7	Restoration of Areas Disturbed by Construction Activities But Not Converted by Long-Term Covered Activities
AM-PW-8	Closure and Decommissioning Standards
AM-PW-9	Standard Practices for Hydrology and Water Resources
AM-PW-10	Standard Practices for Soil Resources
AM-PW-11	Standard Practices for Weed Management
AM-PW-12	Standard Practices for Fire Prevention/Protection
AM-PW-13	Standard Practices for Noise
AM-PW-14	Standard Practices for Siting and Design
AM-PW-15	Standard Practices for Controlling Nuisance Animals and Invasive Species
AM-PW-16	Standard Practices for Caring of Injured Wildlife
AM-PW-17	Other General Standard Practices
AM-LL-1	Linkages and Connectivity
AM-LL-2	Hydrology
AM-LL-3	Aeolian Processes

TABLE 5: Continued

AM-DFA-RIPWET-2	Maintaining Wetland Hydrological Function
AM-DFA-RIPWET-9	Tehachapi Slender Salamander Barriers
AM-DFA-ONC-2	Other Natural Communities Species Preservation or Salvage Actions
AM-DFA-ICS-4	Desert Tortoise Translocation Site Avoidance
AM-DFA-ICS-6	Desert Tortoise Linkage Effects Evaluation
AM-DFA-ICS-7	Desert Tortoise Ord-Rodman TCA
AM-DFA-ICS-8	Desert Tortoise Road Restrictions in Tortoise Conservation Areas and Linkages
AM-DFA-ICS-16	Flat-tailed horned lizard RMS Minimization Measures
AM-DFA-ICS-20	California Condor Guy Wire Bird Deterrents
AM-DFA-ICS-22	California Condor Nest Territory Management Plans
AM-DFA-ICS-30	Golden Eagle Risk Assessment
AM-DFA-ICS-32	Golden Eagle Take Permit Information Submittal
AM-DFA-ICS-34	Desert Bighorn Sheep Water Access – Covered Activities
AM-DFA-ICS-35	Desert Bighorn Sheep Water Access - Transmission
AM-DFA-ICS-38	Mohave Ground Squirrel Impact Minimization in Linkages
AM-DFA-ICS-40	Mohave Ground Squirrel Habitat Growth Configuration
AM-TRANS-1	Undergrounding Electrical Lines
AM-TRANS-2	Flight Diverters
AM-TRANS-3	Avoid Transmission Across Canyons
AM-TRANS-4	Transmission Projects Siting

TABLE 6: Construction CMAs

CMA NUMBER	CMA NAME
AM-PW-2	Biological Monitoring
AM-PW-5	Worker Education
AM-DFA-ICS-9	Desert Tortoise Road Crossings
AM-DFA-ICS-10	Desert Tortoise Exclusion Fencing
AM-DFA-ICS-12	Desert Tortoise Biological Monitoring
AM-DFA-ICS-13	Desert Tortoise Biological Monitoring of Geotechnical Borings
AM-DFA-ICS-14	Desert Tortoise Vehicle Inspection
AM-DFA-ICS-15	Desert Tortoise Speed Limit
AM-DFA-ICS-17	Bendire's Thrasher Biological Monitoring
AM-DFA-ICS-18	California Condor Avoidance and Notification
AM-DFA-ICS-19	California Condor Flight Activity Restriction
AM-DFA-ICS-21	California Condor Materials Storage
AM-DFA-ICS-22	California Condor Ethylene Glycol Restriction
AM-DFA-ICS-31	Golden Eagle Mortality Monitoring

TABLE 7: Operational CMAs

CMA NUMBER	CMA NAME
AM-LL-4	Project-Specific Bird and Bat Operational Actions for Covered Species
AM-DFA-RIPWET-4	Riparian and Wetland Bird Lighting
AM-DFA-RIPWET-7	Fish Operational Recovery Plan Measures
AM-DFA-AG-7	Swainson's Hawk Rodenticides and Insecticides Prohibition
AM-DFA-ICS-14	Desert Tortoise Vehicle Inspection
AM-DFA-ICS-15	Desert Tortoise Speed Limit
AM-DFA-ICS-23	California Condor Detect, Deter, and Curtailment Strategy
AM-DFA-ICS-24	California Condor Operational Prevention
AM-DFA-ICS-25	California Condor Operations Strategy
AM-DFA-ICS-31	Golden Eagle Mortality Monitoring
AM-DFA-ICS-33	Golden Eagle Advanced Conservation Practices
AM-DFA-ICS-41	Mohave Ground Squirrel Avoidance During Operations
AM-DFA-ICS-42	Mohave Ground Squirrel BLM Rodenticides
AM-LL-4	Project-Specific Bird and Bat Covered Species Operational Actions
AM-LL-5	Project-Specific Bird and Bat Non-covered Species Conservation Strategy

TABLE 8: Compensation CMAs

CMA NUMBER	CMA NAME
COMP-1	Compensation Requirements for Siting, Construction, Terrestrial Operational, and Decommissioning Impacts in DFAs
COMP-2	Compensation Requirements for Siting, Construction, Terrestrial Operational, and Decommissioning Impacts for Transmission in the Plan-wide Reserve Design Envelope
COMP-3	Compensation Requirements for Operational Bird and Bat Covered Species Impacts
COMP-4	Golden Eagle Specific Compensation
COMP-5	DRECP-wide Golden Eagle Monitoring

TABLE 9: Preferred Alternative CMAs for Resources Areas

Air Resources
CMAs for the Entire Planning Area
Comprehensive Trails and Travel Management
CMAs for the Entire Planning Area
CMAs in Development Focus Areas and DRECP Variance Lands, Future Assessment Areas, and Special Analysis Areas
CMAs National Conservation Lands, Areas of Critical Environmental Concern, and Wildlife Allocations
CMAs for Special Recreation Management Areas
Cultural Resources and Tribal Interests
CMAs for the Entire Planning Area
CMAs in Development Focus Areas and DRECP Study Areas, and Transmission Corridors
CMAs for National Conservation Lands and Areas of Critical Environmental Concern
Lands and Realty
CMAs for the Entire Planning Area
Exchanges with the State of California
CMAs in Development Focus Areas and DRECP Study Areas
CMAs in National Conservation Lands
CMAs in Areas of Critical Environmental Concern
CMAs in Wildlife Allocations
CMAs in Special Recreation Management Areas
Livestock Grazing
Standards of Rangeland Health and Guidelines for Grazing Management
CMAs for the Entire Planning Area
Minerals
CMAs for the Entire Planning Area
High Potential Mineral Areas
Existing Mineral/Energy Operations
Existing High Priority Mineral/Energy Operations Exclusion Areas
Access to Existing Operations
Areas Located Outside Identified Mineral Areas
CMAs in National Conservation Lands and Areas of Critical Environmental Concerns
High Potential Mineral Areas
National Scenic & Historic Trails
Conservation and Management Actions
National Recreational Trails
Conservation and Management Actions
Paleontology
CMAs for the Entire Planning Area
Recreation and Visitor Services
CMAs for the Entire Planning Area
CMAs in Development Focus Areas and DRECP Variance Lands, Future Assessment Areas, and Special Analysis Areas
CMAs in National Conservation Lands, Areas of Critical Environmental Concern, and Wildlife Allocations
CMAs in Special Recreation Management Areas
Soil, Water, and Water-Dependent Resources
CMAs Common to the Entire Planning Area
General
Soil Resources
Surface Water
Groundwater Resources
Soil, Water, and Water-Dependent Resources CMAs Restricted to Specific Areas on BLM lands (Devils Hole; Calvada Springs/South Pahrump Valley DFA; Death Valley National Park, Joshua Tree National Park or Mojave National Preserve)
CMAs for Development Focus Areas and DRECP Study Areas (for Vegetation only)
Special Vegetation Features
CMAs Common to the Entire Planning Area
Vegetation
CMAs Common to the Entire Planning Area
CMAs for Development Focus Areas and DRECP Study Areas
Visual Resources Management
CMAs Common to the Entire Planning Area
CMAs for Development Focus Areas and DRECP Study Areas
CMAs in Areas of Critical Environmental Concern and Special Recreation Management Areas
Wild Horses and Burros
Conservation and Management Areas for Development Focus Areas and DRECP Variance Lands, Future Assessment Areas, and Special Analysis Areas
Wilderness Characteristics
CMAs Common to the Entire Planning Area
CMAs for those Lands Identified for Management to Protect Wilderness Characteristics
CMAs for Development Focus Areas and Approved Transmission Corridors

NOTES:

** CMAs = Conservation and Management Actions*

*** In additionto the biological CMAs that apply to Covered Activities in the DFAs, transmission projects in the reserve would be required to implement the applicable biological CMAs for the reserve shown in Section II.3.1.2.5.5*

II.3.1.5.5 DRECP Conservation Area Assembly

Reserve Assembly

Assembly of the DRECP Conservation Area is one of the key elements of the DRECP conservation strategy and is necessary to achieve the DRECP's Step-Down Biological Objectives. On private lands, the DRECP Conservation Area will be assembled primarily through the purchase of land from willing sellers. Only lands that will significantly contribute to the assembly of the reserve, both with regard to protection of existing important resources and the ability to manage the resources in perpetuity, will be acquired. Lands acquired for the DRECP would be managed and monitored consistent with the DRECP. Appendix H, Section H.4.3, describes the process for identifying conservation priorities including mapped priority areas and criteria to be used by the Coordination Group for land acquisition during plan implementation.

Assembly of the DRECP Conservation Area on BLM-administered lands will be accomplished consistent with the BLM LUPA, DRECP concepts and principles, federal law, MOUs between the BLM and CDFW dated November 27, 2012, and the non-acquisition compensation approach described in Section H.4.3 of Appendix H. The MOUs address cooperation and coordination between BLM and CDFW regarding the management of BLM Conservation Lands and the creation of the NCCP Reserve, a portion of which will occur on BLM Conservation Lands. Assembly of the DRECP Conservation Area on BLM Conservation Lands will be accomplished through assembly of the NCCP Reserve. As explained in the November 27, 2012 MOU, BLM and CDFW will work together to "identify and evaluate tools and actions, consistent with BLM's land use authority…to manage the lands identified by CDFG[5] as part of a habitat reserve to meet the NCCPA requirements." The MOU provides guidelines for compensatory mitigation actions, including the possibility of mitigation on BLM lands for impacts caused by development on privately and state-owned lands. In general, the DRECP Conservation Area on BLM-administered lands will be assembled on the BLM Conservation Lands on which non-acquisition forms of compensatory mitigation and conservation actions are implemented.

Criteria for Land Acquisition

The Coordination Group will be responsible for determining the private lands most suitable for acquisition based on a variety factors, including existing biological value, future value with management (including creation, restoration and enhancement), and practical

[5] Now the California Department of Fish and Wildlife (CDFW).

considerations, such as availability (i.e., willing sellers) and cost. All land acquisitions from private property owners will be from willing sellers.

The factors that will be used to determine the private lands that are most suitable for acquisition include the following.

- Selection of acquisition sites will be based on consideration of ability of the site to contribute to meeting the Step-down Biological Objectives and minimize and mitigate the effects of incidental take of Covered Species, as well as cost and availability (i.e., willing sellers).
- Demonstrated contribution to meeting the Step-down Biological Objectives with regard to landscape feature, ecological processes, natural communities, and/or Covered Species. High priority will be given to lands that:
    - Contain resources impacted by Covered Activities being compensated (i.e., "like-kind")
    - Provide important landscape functions including habitat linkages, wildlife movement, sand transport, and hydrologic integrity
    - Support rare vegetation alliances or local rare vegetation occurrences that may not be adequately conserved in other lands in the reserve
    - Have high Covered Species richness and ecological value
    - Have high landscape intactness
    - Are resistant to climate change and/or offering most climate refugia value (i.e., areas identified as important for accommodating climate change-related shifts such as higher elevation refuges for plant and animal communities)
    - Are identified as compensation priority areas by the Coordination Group during plan implementation (see Appendix H, Section H.4.3)
- Ability to be managed for long-term conservation.
- All lands acquired for the DRECP Conservation Area would be managed for the conservation of DRECP Covered Species, natural communities, and ecological processes and will include:
    - long-term property stewardship (e.g., general site maintenance, fence and sign maintenance)
    - long-term compliance and effectiveness monitoring implemented consistent with and in coordination with the DRECP MAMP

  - long-term management activities (e.g., invasive control actions, site patrolling and enforcement, species-specific management actions) implemented consistent with and in coordination with the DRECP

- Evaluation of a site's ability to be managed for long-term conservation would include a consideration of existing condition and anticipated nearby land uses. For example, inholdings within BLM conservation areas likely are better candidates for management than edge sites next to urban development or heavily used recreation areas. However, some peripheral sites may add significant value to the reserve by providing buffer function for high resource value reserve lands.
- Acquisition will occur on private lands in the DRECP Plan-Wide Reserve Design Envelope, including inholdings within LLPAs and BLM LUPA conservation designations.
- Acquisition should occur in the same ecoregion subarea as where the impact occurs. In cases where the impacts span more than one subarea, acquisition can be wholly or partially in those subareas.

Acquisition Lands Assessment Outline

A general outline for assessing potential acquisition lands is described here. This outline includes basic property information and biological considerations based on the criteria described above.

- Property location: a simple legal description of the property
- Existing setting, including:
- General location in the Plan Area
- Adjacent and nearby land ownership and land uses (both historical and current)
- Existing conditions based on DRECP database information, including land cover(s), hydrology, soils, topography and any other unique landscape features (e.g., rocky outcrops, cervices, mines, etc.)
- Existing ROWs and easements on the land
- Site conditions (likely requiring a site visit) including, but not limited to:
- Existing roads, utility lines, and fencing
- Other man-made features or disturbances (e.g., buildings, mechanical clearing)
- Water sources (wells, springs, waters features)
- Biological conditions (more refined than DRECP land cover data), including:

- On-site vegetation communities (at least to alliance level) and other non-natural land covers
- Evidence of Covered Species or their habitats (the DRECP data may include modeled habitat for a species on the site, but field assessments should be used to confirm whether the site actually supports suitable habitat given the spatial scale of the DRECP data used for the habitat models). For some sites, additional focused surveys for Covered Species may be required for a final determination of acquisition.
- Microhabitat or microenvironment features that may support a particularly high biodiversity or unique or narrow endemic species (e.g., springs, caves, rock outcrops)
- Level of existing disturbance, such as presence of non-native plant and animal species, ground disturbances that may be difficult to remediate (e.g., impacts to desert pavement), grazing, OHVs, trash dumping, illegal shooting, etc.
- Presence of human-subsidized species such as common ravens
- Overall assessment of site for acquisition based on several factors:
- Presence of, or high potential to support, Covered Species (e.g., with habitat creation, restoration, or enhancement)
- Level of existing disturbance
- Contribution to reserve function
- Manageability
- Ability to buffer other high value reserve lands
- Cost and availability

The Coordination Group will develop a formal site assessment method and standard report template prior to initiating land acquisition assessments.

Timing of Land Acquisition

The NCCPA requires that "implementation of mitigation is roughly proportional in time and extent to the impact on habitat or covered species authorized under the plan" (California Fish and Game Code, Section 2820[b][9]). To meet this requirement, the DRECP requires that land acquisition, as well as non-acquisition forms of compensatory mitigation, be initiated and/or completed within 12 months of the time the impact being mitigated occurs (e.g., ground disturbance for construction activities of mortality due to operations), with a 6 month extension permitted subject to approval by the agency issuing the permit/approval for the Covered Activity.

Rough proportionality requirements for various conservation actions may vary. For example:

- For land acquisition forms of compensation, the entity receiving the fee and responsible for acquisition, or the project developer if such developer has elected to complete land acquisition in lieu of paying a fee, must demonstrate completion of land acquisition or conservation easement and conveyance to the appropriate land management entity.
- For habitat restoration/enhancement forms of compensation, the permitting/approving entity must demonstrate completion of installation of plant materials and that initial (3-6 months) success criteria are met, recognizing full satisfaction of success criteria may extend for several years.
- For non-acquisition forms of compensation, time considerations may vary depending on whether the activity is action oriented (e.g., installation of fencing) or non-action oriented (e.g., a durability mechanism).

General Process for Land Acquisition

The Coordination Group will be responsible for implementing all land acquisitions for the DRECP Conservation Area. In addition to meeting the land acquisition criteria stated above, several issues will need to be addressed during the acquisition process:

- Ensuring that the property has no encumbrances (e.g., liens, ROWs, mineral rights, existing easements), as identified in a preliminary title report, that will substantially conflict with protection and management of the site or compromise the conservation values and other DRECP BGOs.
- Ensuring that the property does not have hazardous waste, as identified in a Phase 1 Site Assessment.
- Land may be acquired through fee title or conservation easement, according to the following steps:
    1. Identify sites that meet the biological criteria described above based on general review of available data (i.e., excluding the ground-based site assessment).
    2. Contact property owner and determine their willingness to sell the land of provide and easement. Private property rights will be fully respected and land will only be acquired from willing sellers at fair market value and with terms mutually acceptable to the seller and the Coordination Group.
    3. For willing sellers, identify sites for follow-up on-the-ground site assessment or more detailed assessment using remote sensing information (e.g., air photos).

4. Conduct any additional study(ies) of the site that may be needed to confirm the suitability of the site for acquisition.
5. If the site meets the criteria for acquisition, conduct appraisal for fee title or easement and negotiate conditions for acquisition with the property owner, including, but not limited to, easement vs. fee title, cost, and other pertinent conditions of sale or easement (e.g., removal of existing structures, etc.). The negotiation period will be up to 120 days. If at the end of 120 days an agreement is not achieved, the negotiation period may be extended upon mutual written consent of both parties.
6. The Coordination Group will rank and prioritize suitable acquisitions using a standard and objective evaluation method (e.g., a scoring system).
7. For properties acquired through conservation easement, the Coordination Group will work with the property owner to develop the conservation easement agreement, which will include the general conditions for maintenance of the site and conditions for management and monitoring of DRECP Covered Species, natural communities, and ecological processes on the site consistent with and/or complementary to the DRECP (management details may be refined at a later time).
8. For properties acquired in fee title and added to an existing reserve, the existing reserve management plan will be updated to include the new property, as needed.

Property Owner Initiated Conveyances

Upon approval of the DRECP some property owners may want to initiate the processes of conveying their land to the reserve either through fee title sale or conservation easement. In this case the property owner would submit an application to the Coordination Group for review and determination whether the property would meet the general criteria for acquisition. The Coordination Group will provide the property owner with application instructions that would meet the requirements of a complete application. This application will include a biological evaluation of the property by a qualified biologist, including land cover mapping, assessment of occurrence or potential occurrence of Covered Species or their habitat, and the biological contribution of the property using the criteria listed above under Criteria for Land Acquisition. If necessary, the Coordination Group may request access to the property to verify conditions on site, or may request additional studies. If the site meets the initial screening for acquisition, the process will follow steps 6 through 7 or 8. It will be made clear to the property owner at this time that acceptance of the property for potential inclusion in the reserve is not guaranteed and that the site would be ranked and prioritized for acquisition like any other properties.

Individual project proponents may choose to acquire and convey lands to DRECP. Where an NCCP or GCP permittee proposes to provide lands for addition to the reserve in lieu of paying a portion of the DRECP implementation fee, no ground-disturbing activities conducted in conjunction with the permit would be allowed until the Coordination Group has accepted, and the permittee has conveyed, the proposed property into the reserve, another appropriate mitigation site has been secured, or the applicant has paid the implementation fee.

II.3.1.5.6 Information Management

Data Management

A. A centralized data management system for the DRECP will be established and managed by the Coordination Group. For the MAMP, monitoring and management data and other relevant information (e.g., independent research studies within the reserve, independent scientific literature, etc.) will be compiled by the Coordination Group to ensure that all relevant data and information are integrated, synthesized, and evaluated. The Coordination Group will also be responsible for data storage and management. All data collected for DRECP-related purposes will be appropriately collected, recorded, and reported according to standard quality assurance measures (also called "best practices"). The quality assurance measures will be established as part of MAMP preparation. Generally, any spatial data will be identified using a digital GIS format in a known coordinate system and to a precision appropriate to the spatial resolution of the subject. All field data will be supplied by the collector to the Coordination Group via the Project Manager in a readable digital format compatible with entry into the DRECP data portal (see Section II.3.1.3.5.2)

B. Data storage and management on the DRECP data portal will be standardized to maintain a high level of quality assurance and will include specific protocols for naming directories, subdirectories, and files. For all datasets (raw data or modeled results), standardized metadata will be provided, including full explanations for how various datasets and other products were created.

C. The Coordination Group will make the database information available to the various entities involved in DRECP implementation, including the Adaptive Management Team, the Stakeholder Working Group, Supporting Entities, Partners Working Group, as well as other agencies involved in implementing the DRECP, and other interested parties. While data sharing will be encouraged, some datasets may be kept private and only available to a defined subset of users (permanently or temporarily) include: (1) resource security issues; (2) data sensitivity issues such as specific locations of rare or highly sensitive species (e.g., bat roosts); (3) sharing limitations due to existing data sharing agreements; and (4) state of data

completeness (working drafts of some datasets are often best kept private or have limited distribution until they are fully vetted and finalized). In most cases, a balance can be struck that allows for some aspects of datasets to be made public without compromising the reasons for which the content was made private. For example, if the specific spatial location of certain features is the concern, the original data can be generalized to be less explicit as to its specific location. In other cases, sensitive attributes can be removed (e.g., land owner name) from features that can otherwise be shared.

II.3.1.5.7 Annual Reporting

The Coordination Group will issue an annual report that describes for the reporting period the status of Covered Activities for that year and to-date from the Effective Date of the permit, the results of the required monitoring and management, any instances of non-compliance with the provisions of the DRECP and actions taken to rectify the non-compliance, and any other problems encountered in implementing the DRECP in the reporting period.

The annual reports will provide the results of DRECP compliance and effectiveness monitoring.

The annual reports will include the following compliance monitoring information:

- Summary of all Covered Activities conducted the previous year including, but not limited to:
  - Project description summary, including type of project, types of environmental impacts (i.e., natural communities, Covered Species, modeled habitats), compliance monitoring contractor, and avoidance, minimization, and mitigation measures implemented during the project.
- Total impacts to Covered Species and/or their modeled habitat as a result of Covered Activities in the previous year.
- Total impacts, including cumulative totals, to nonbiological resources as required by the project permitting agency. Total impacts, including cumulative totals, to Covered Species and/or their modeled habitat as a result of Covered Activities to date since commencement of the DRECP (e.g., the effective date).
- Summary of avoidance and minimization measures implemented in relation to Covered Activities in the previous year, including:
  - Implementation of environmental compliance monitoring programs;
  - Implementation of environmental training for compliance monitors and contractor education;

  - Results of compliance monitoring programs, including successes and problems or issues in implementing avoidance and minimization measures;
  - Variances to authorized Covered Activities granted during compliance monitoring;
  - Description of compliance contractors; and
  - Cumulative totals of the implemented avoidance and minimization measures to date, since commencement of the DRECP (e.g., the effective date).
- Conservation measures initiated, continued, or completed in the previous year, including habitat additions to the Reserve System and management actions.
- Conservation measures initiated, continued, or completed to date (cumulative totals) since commencement of the DRECP.
- Conservation measures planned to be initiated, continued, or completed the next 3 (5?) years.
- A running tabulation of habitat created, restored, protected, or enhanced under the Plan during the previous year and to date since commencement of the DRECP (e.g., the effective date).
- Description of all findings, conclusions, and results of effectiveness monitoring, research, or conservation measures previously undertaken, including an evaluation of any significant issues encountered during effectiveness monitoring.
- Summary of significant communications and interactions among DRECP participants, including the Coordination Group, Adaptive Management Team, Stakeholder Working Group, Partners Working Group, permitting agencies, other state, federal, or local agencies, scientists and other interested parties during the previous year, including formally scheduled meetings, significant issues related to DRECP implementation and/or Covered Activities, conflicts, and resolution of conflicts.
- Description of any enforcement actions taken by the permitting agency(ies) during the previous year.
- Description of expenditures of funds to implement the DRECP during the previous year.
- Description of expenditures of funds to implement the DRECP to date since commencement of the DRECP (e.g., the effective date).
- Description of any activities to secure funding for conservation measures (e.g., grant applications) during the previous year.

- Description of any DRECP modifications or amendments proposed or approved during the previous year.
- Summary of all approved DRECP modifications and amendments approved to date, including a brief description of the action and the year it was approved.
- Description of any clerical corrections or errata made to the DRECP during the previous year.

The results of effectiveness monitoring will be analyzed and reported by the Adaptive Management Team to the Coordination Group to be included in the annual reports prepared by the Coordination Group. The annual reports prepared by the Coordination Group will include a description of the effectiveness monitoring conducted the previous year and to date since commencement of the DRECP (e.g., the effective date). The report(s) for effectiveness monitoring prepared by the Adaptive Management Team will include at minimum:

- Data and information about who collected the data and the frequency, timing, and duration of data collection.
- A description of the data analysis and results.
- Synthesis/integration of the year's monitoring and management results with previous years as applicable (e.g., analyzing apparent trends).
- Identification of any significant problems or successes with the program that may alter the monitoring and management program approach.
- Suggested changes/revisions to the monitoring and management program, if any, based on the points listed above.
- Documentation of changed or unforeseen circumstances that occurred during the previous reporting year and how they were addressed.
- Discussion of triggers for adaptive management and how they were implemented.

II.3.1.5.8 Modifications and Amendments

DRECP Administrative Changes, and Conservation Program Modifications and Amendments

It is anticipated that the DRECP conservation program will require periodic administrative changes and modifications and amendments during implementation. Administrative changes refer to internal changes or corrections that would not require approval by the USFWS, CDFW or BLM. Modifications are changes that do not significantly change or affect the DRECP conservation program. Modifications can occur administratively by the Coordination Group and do not require formal amendment of the LUPA, GCP, or NCCP.

However, BLM must approve any modifications to the LUPA; USFWS must approve any modifications to the GCP; and CDFW must approve any modifications of the NCCP. These agencies are the "approval agencies" for each plan.

Major changes to the DRECP's conservation program will require a formal amendment to the LUPA, GCP, the NCCP or all three.

Administrative changes, modifications, and amendments are described more fully below.

Administrative Changes

Administrative changes refer to internal changes or corrections to the LUPA, GCP, or NCCP that are not substantive enough to require approval by the approval agencies. These changes will be tracked by the Coordination Group and reported in the annual reports.

Administrative changes may include, but are not limited to:

- Revisions of maps or exhibits to correct errors in mapping, or to reflect changes previously approved by the approval agencies in the DRECP environmental documents.
- Clerical changes and/or corrections of typographic, grammatical, and similar editing errors that do not change the intended meaning of the DRECP and its conservation program.
- Day-today monitoring and management adjustments in response to changing conditions, such as, minor adjustments to monitoring intensity or frequency, irrigation schedules, or initiating invasive species controls.
- Adopting revised USFWS, CDFW, or BLM monitoring protocols if it is determined that the revised protocol does not conflict with the prior protocols approved by the Agencies (e.g., by reducing the ability to detect a species).
- Adjustments in implementation fees to reflect cost increases or decreases.

Modifications

Modifications are changes that do not significantly alter or affect the DRECP conservation program. Modifications can occur administratively by the Coordination Group and do not require formal amendment of the LUPA, GCP or NCCP, but they do require the approval of the approval agencies. Modifications to the DRECP may include, but are not limited to:

- Changes to the boundaries of Conservation Priority Areas that the approval agencies conclude are minor and would not alter the analysis of environmental effects, and in particular, the effects of the Covered Activities on natural resources, contained in

the DRECP environmental documents (LUPA, GCP, NCCP, EIS and EIR), the USFWS ESA Section 7 biological opinion for the DRECP, and the NCCP findings by CDFW. Any combination of adding and removing land from the Conservation Priority Areas must not result in a net loss of acreage or long-term habitat value.

- Updates to biological baseline data, including land cover, Covered Species occurrences that are consistent with the expectations of the Plan.
- Minor modifications of Covered Activities that do not require additional CEQA, NEPA, NCCPA or ESA analysis, such as improvements to renewable energy technologies that result in fewer impacts than existing technologies.
- Minor modifications to the BGOs in response to monitoring and adaptive management that do not require additional CEQA, NEPA, NCCPA or ESA analysis.
- Updating survey protocols.
- Minor modifications to reporting and monitoring requirements.
- Transfer of conservation easement(s) on lands to another entity approved by, and on terms acceptable to, the Wildlife Agencies that ensure the permanent protection of such lands for conservation purposes consistent with the DRECP and the terms of the applicable conservation easement.
- Transfer of fee title to conserved lands within the DRECP Conservation Area that are covered by an executed and recorded conservation easement to an entity approved by, and which contains terms acceptable to, the Wildlife Agencies that ensure the permanent protection of such lands for conservation purposes consistent with the DRECP and the terms of the applicable conservation easement.
- Changes to the membership of the Adaptive Management Team, Partners Working Group, Stakeholder Working Group, and other working groups.
- Other types of modifications that all of the approval agencies agree are minor in relation to the DRECP.

Minor modifications must not result in net loss of habitat value in the reserve or otherwise reduce the effectiveness of the conservation program. In most cases, a minor modification should improve the effectiveness of the program.

The Coordination Group will maintain an appropriate record of all modifications to the DRECP and permit(s).

Amendments

Any proposed changes to the DRECP conservation program that do not meet the criteria described for administrative changes or modifications would require an amendment of the

LUPA, GCP, the NCCP, or all three. The LUPA, GCP, and NCCP may be amended in accordance with the applicable legal requirements of the FLPMA, ESA, the NCCPA, NEPA, and CEQA. An amendment would require a formal review and approval process, including public review, NEPA and CEQA compliance, federal Section 7 consultation, and revised CDFW NCCP findings, as appropriate.

Examples of actions that would require an amendment to the DRECP conservation program include, but are not limited to, the following:

- Significant reserve boundary revisions that could reduce reserve acreage or function.
- Significant changes to Covered Activities (e.g., construction methods, modified technologies, operations and maintenance, etc.) that were not that were not analyzed as part of the original DRECP and would result in material changes to the Plan and/or new or different potentially significant impacts to the environment.
- Take of Covered Species and/or their habitat beyond levels authorized in the permit(s).
- Changes in funding or implementation schedule.
- Adding or removing a species from the list of Covered Species.

II.3.1.6 Obtaining Federal ESA and NCCPA Take Authorizations for Covered Activities

The DRECP provides a basis for the issuance of authorizations under ESA and the NCCPA for the take of Covered Species resulting from Covered Activities. Proponents of proposed renewable energy generation and transmission projects, and related projects and activities, that fall within the description of Covered Activities in Section III.3.1.4 may apply for a take authorization under the DRECP. To obtain a take authorization, an eligible project must follow the applicable application process and must comply with all applicable DRECP requirements, including the avoidance, minimization and mitigation measures for Covered Species. The DRECP's substantive requirements (avoidance, minimization, and mitigation measures, etc.) for take authorizations for Covered Activities are the same regardless of whether a Covered Activity is proposed on BLM land, CSLC lands, or other public or private land. However, the *procedure* for obtaining take authorizations will vary somewhat depending on the ownership of the land on which a Covered Activity is proposed and whether the Covered Activity is subject to CEC jurisdiction. This section explains how project-specific federal and state take authorizations can be obtained under the DRECP, including the application process that must be followed and the substantive requirements that apply.

This section includes the following:

- Description of how take will be authorized for Covered Activities on BLM lands (LUPA and NCCP)
- Description of how take will be authorized for Covered Activities on nonfederal land (NCCP, GCP, and CEC and CSLC Covered Activities for which incidental take would be authorized under the NCCP or GCP)
- Take allocation assumptions and approach

II.3.1.6.1 Take Authorization for Covered Activities on BLM Land (LUPA and NCCP)

All activities proposed on BLM land, including but not limited to Covered Activities, must comply with applicable BLM land use plans, as amended by the LUPA. Activities proposed by a qualified individual, business or government agency over, under, on, or through BLM lands may apply for a ROW authorization by following the ROW approval process pursuant to 43 CFR Part 2800 and applicable policies at the time of application. The LUPA includes DRECP CMAs that apply on BLM land, such that compliance with BLM land use plans will require implementation of the DRECP's CMAs for Covered Species, including measures to avoid, minimize and mitigate take of Covered Species. Project siting, design and operation must adhere to appropriate CMAs for Covered Species, and for recreation, cultural, and other resources, to receive approval of a ROW to use BLM land.

Complying with applicable BLM land use plans will provide the basis for obtaining incidental take authorizations for Covered Species under the DRECP, in accordance with Section 7 of ESA. For purposes of obtaining a take authorization under state law, proponents of Covered Activities must also follow the appropriate State application process. Regardless of which state application process applies, however, federal and state application process will be coordinated, and the same substantive requirements will apply for both federal and state take authorizations for Covered Species.

II.3.1.6.1.1 Federal Take Authorization for Covered Activities on BLM Lands

The USFWS will prepare a biological opinion for the LUPA pursuant to Section 7 of ESA. The biological opinion will take into consideration all aspects of the LUPA that are pertinent to an analysis of the LUPA's effect on species listed pursuant to ESA, specifically including CMAs for Covered Species included in the LUPA. The USFWS' biological opinion is expected to include an incidental take statement that will exempt Covered Activities implemented on BLM land from ESA's take prohibition, provided the Covered Activities are implemented in accordance with the CMAs for Covered Species. Other activities proposed on BLM lands would be covered under a project-specific incidental take statement. BLM's approval of a

ROW for a proposed activity, including conditions of approval that ensure implementation of appropriate CMAs for Covered Species, can therefore provide take coverage for the activity under ESA.

The USFWS will work with BLM and project applicants to address compliance with the Eagle Act for Covered Activities proposed on BLM lands. Where appropriate, project specific analyses including the development of an Eagle Conservation Plan and additional analysis to comply with NEPA will be conducted to support applications for take permits pursuant to the Eagle Act permitting regulations.

II.3.1.6.1.2 State Take Authorization for Covered Species from Covered Activities within CEC's Jurisdiction

As part of its exclusive jurisdiction under state law over thermal generation projects with the capacity to generate 50 megawatts or more, the CEC has the authority to issue take authorizations based on an NCCP that has been approved by CDFW. The CEC will incorporate DRECP CMA's as conditions of approval in its licensing process for Covered Activities in the Plan Area. Covered Activities within CEC jurisdiction may thereby obtain state take authorizations through the CEC's licensing process. For Covered Activities that are within CEC jurisdiction and are proposed on BLM lands, the CEC and BLM will coordinate the CEC's licensing process with BLM's ROW process, such that BLM and CEC review of proposals for Covered Activities will occur concurrently, information requirements regarding impacts to Covered Species will be consistent, and project conditions and requirements regarding DRECP CMAs will be consistent.

II.3.1.6.1.3 State Take Authorization for Other Covered Activities on BLM Land

For any Covered Activities proposed on BLM land that are not within CEC jurisdiction, a State take authorization based on the NCCP may be obtained by applying to CDFW using the integrated project proposal review process described in Section II.3.1.5.3. CDFW and BLM will coordinate CDFW's application process and BLM's ROW process, such that BLM and CDFW review of project proposals will occur concurrently, information requirements regarding impacts to Covered Species will be consistent, and project conditions and requirements regarding DRECP CMAs will be consistent.

II.3.1.6.2 Take Authorization for Covered Activities on Private Lands and Lands Owned by State Agencies or Local Governments

Covered Activities proposed on private lands and nonfederal public lands are eligible to obtain a federal incidental take authorization under the GCP and a State take authorization under the NCCP. In general, for Covered Activities proposed on such lands, an applicant must apply to the USFWS for a federal take authorization and must apply to

CDFW for a State take authorization, using the integrated project proposal review process described above.

For Covered Activities within the land use authority of a local government, the local government will retain its full discretionary authority. This means that the local land use approval process will continue to apply to the Covered Activity, and the local government will ordinarily be the CEQA lead agency for, and will determine whether to approve, the Covered Activity. Proponents of Covered Activities within the land use authority of a local government may apply for federal take authorizations from the USFWS, and for State take authorizations from CDFW, during and in coordination with the local environmental review and land use approval process.

Local and state agencies with discretionary approval authority over Covered Activities may apply for state and federal take authorizations that can be extended to Covered Activities within their discretionary authority. Local and State agencies can do so either by applying for take authorizations based on the programmatic GCP and NCCP components of the DRECP or by developing a regional NCCP and directly applying for incidental take permits under the GCP with additional Covered Activities. Where Covered Activities are within the discretionary authority of a local or state agency that has received a federal take authorization under the GCP or a state take authorization under the NCCP, proponents of Covered Activities must apply to that local or State permittee for coverage under its take authorization.

Two state agencies have applied for take authorizations under the GCP and/or NCCP components of the DRECP. The CEC has applied for a federal take authorization under the GCP, and the CSLC has applied for both a federal take authorization under the GCP and a State take authorization under the NCCP. Currently, no local agencies have applied for take authorizations under the GCP or NCCP. Federal agencies will not apply for such take authorizations because they are not required to obtain take authorizations under State law and, under ESA, cannot obtain take authorizations under the GCP. Instead, federal agency actions that would result in take of a listed species must obtain an exemption from ESAs take prohibition under Section 7 of ESA.

Once the CSLC has received its federal and state take authorizations, proponents of Covered Activities proposed on CSLC lands must apply to the CSLC through its leasing process to obtain coverage under the CSLC federal and state take authorizations.

Once the CEC has received its federal take authorization, proponents of Covered Activities within the CEC's jurisdiction must apply to the CEC through its licensing process to obtain coverage under the CEC's federal take authorization. When CEC permits a project under the NCCPA, CEC's certification stands in lieu of CDFW's permitting process and the local government agency's permitting process.

II.3.1.6.2.1 CEC Covered Activities

The CEC will receive a federal take authorization from the USFWS based on the GCP, which will cover Covered Activities that are within the CEC's jurisdiction and are proposed on nonfederal public lands or on private lands within the Plan Area. Because the CEC has exclusive State jurisdiction over thermal power plants that have the capacity to generate 50 megawatts or more, the CEC is not required to obtain a State take authorization. Instead, it may itself issue State take authorizations for Covered Activities under its jurisdiction in accordance with the NCCP and in coordination with CDFW. For Covered Activities proposed on nonfederal public lands or on private lands, a project proponent may, through the CEC's licensing process, obtain coverage under the CEC's federal take authorization and obtain a state take authorization. The CEC's licensing process will ensure that proposed Covered Activities comply with GCP and NCCP requirements, including, for example, a requirement that applicable DRECP CMAs be included as conditions of licensing for Covered Activities. Project proponents may obtain coverage under the CEC's federal take authorization and receive a state take authorization by complying with these requirements and including applicable avoidance, minimization and mitigation measures, and other applicable DRECP standards and measures in an integrated projects proposal, as described in Section II.3.1.5.3.

II.3.1.6.2.2 CSLC Covered Activities

CSLC will receive a federal take authorization from the USFWS based on the GCP and a state take authorization from CDFW based on the NCCP. The federal and state take authorizations will cover Covered Activities on CSLC lands. For Covered Activities proposed on CSLC lands, an applicant may obtain coverage under CLSC's federal and state take authorizations through the CSLC's leasing process. The CSLC's leasing process will ensure that proposed Covered Activities comply with GCP and NCCP requirements and will require applicable DRECP CMAs as terms and conditions of leases for Covered Activities.

Project proponents may obtain coverage under the CSLC's federal take authorization and state take authorization by complying with these requirements and including applicable avoidance, minimization and mitigation measures, and other applicable DRECP standards and measures in proposed Covered Activities, as described in Section II.3.1.6.3.

For Covered Activities proposed on CSLC lands that are within the CEC's jurisdiction (thermal power plants with the capacity to generate 50 megawatts or more), federal and state take authorizations will be provided by the CEC, in accordance with the process and requirements described in Section II.3.1.6.2.1.

II.3.1.6.3 Take Allocation Assumptions and Approach

The final NCCP and GCP will include limits on the total amount of take that can be authorized for Covered Activities under each plan. Because the NCCP covers both federal and nonfederal land, the total amount of take that can be authorized under the NCCP will be larger than the amount of take that can be authorized under the GCP. However, on nonfederal lands where the NCCP and GCP overlap, the NCCP and GCP will have the same take limits. Within the overall limits on authorized take under the NCCP and GCP, CDFW and the USFWS will allocate authorized take in take authorizations issued for Covered Activities. Each permittee will receive a certain take allocation—an amount of take that is authorized in each permit.

This section describes how CDFW and the USFWS will allocate take for Covered Activities under the DRECP and includes the following specific elements related to take allocation:

- Assumptions
- Approach
- Metrics
- Temporal Loss
- Reporting

Assumptions

1. Take will be allocated geographically, generally by ecoregion subarea with exceptions for certain species, such as desert tortoise where allocation by recovery unit is the more appropriate geographic unit, or golden eagle where three geographic units have been identified in the Plan Area.
2. Take will be allocated to each DRECP component as appropriate (e.g., LUPA, NCCP, and GCP).
3. Within the take allocation for each DRECP component take will be allocated to each permittee as appropriate (e.g., CEC, CSLC and future permittees) or to BLM and its applicants.
4. Take will be allocated based on estimated take levels AFTER application of avoidance and minimization CMAs.
5. Methods for quantifying take will use best available information and will be documented for each species or species surrogate (with modeled suitable habitat the typical species surrogate for DRECP). Predicted (modeled) and actual extent of suitable habitat and relationship to take allocation will be continually evaluated and

documented during DRECP implementation but such evaluation will not change the take limit.

6. Take will be allocated for renewable energy generation and transmission Covered Activities.
7. Take allocation will include amounts necessary to cover conservation actions undertaken as part of the DRECP.
8. The LUPA ESA Section 7 consultation/Biological Opinion will consider the effects to federally listed species of the LUPA in its entirety, including the effects of all land allocations in the LUPA. The LUPA incidental take statement will apply only to renewable energy generation Covered Activities within DFAs and transmission Covered Activities within and outside DFAs; non-renewable projects under the LUPA will be addressed on a project-by-project basis through subsequent Section 7 consultation processes.

Approach

Take allocation under the DRECP will include a Plan-wide take limit with allocations for each species to each DRECP component (LUPA, NCCP, GCP) at the ecoregion subarea level (or other geographic unit such as recovery unit if appropriate for a particular species). Take allocations for permittees will be part of the take allocation for the DRECP component under which the permittee receives a permit. For example, the take authorized in a permit issued under the GCP will come from the GCP's overall take allocation.

Table II.3-32 lists each species for which take will be allocated and indicates the ecoregion subarea, and if applicable, the geographic unit within which the species is located.

Each DRECP component or permittee under a DRECP component will have an allocation "bank account" at the ecoregion subarea level with an initial take allocation and the ability to withdraw additional take from the ecoregion subarea bank as needed until the bank account is empty. The initial take allocation to each DRECP component or permittee will be assured for 10 years, with each component or permittee under the obligation to "use it or lose it." In this respect, take allocation will be phased with the total take allocated to each component or permittee analyzed and authorized at the time of permit issuance with the initial amount allocated for the first 10 years and additional approvals up to the maximum over the permit term. Table II.3-33 is a template that illustrates how take will be allocated using this approach.

In contrast to other Covered Species, the take limit for golden eagles will apply to all activities with Eagle Act authorization within the golden eagle geographic unit, and will not be limited to take associated with DRECP Covered Activities. In other words, take resulting

from authorized activities that are not covered by the DRECP will be counted against the take limit established for golden eagles, and take of golden eagles associated with DRECP Covered Activities will only be authorized if the take limit is not reached. As described in Appendix H, the annual take limit for golden eagles will be reset based on estimated and recorded loss of individuals and/or territories. For projects where on-going take is anticipated (e.g. wind), take will be authorized for multiple years (i.e., will not be reset annually) and will be subtracted from the available annual balance in the global bank for the anticipated life of the project or permit (DRECP) term.

To ensure that any single project does not consume all the available eagle take within a region and result in the preclusion of other activities that are likely to take eagles in that region and to minimize take of eagle territories (which counts as take of 4.26 eagles), there will also be a project-level take cap for each region. The estimated (authorized) amount of take for any single project cannot exceed more than 40% of the total regional take cap. The 40% is calculated based on the maximum allocated regional take for the year (i.e., it is not calculated based on the amount of regional take remaining when a project comes in for approval).

Table II.3-32
DRECP Covered Species for Which Take Will Be Allocated

Covered Species	Ecoregion Subarea	Species-Specific Regions
Amphibian/Reptile		
Desert tortoise	Cadiz Valley and Chocolate Mountains	Colorado Desert
	Imperial Borrego Valley	Colorado Desert
	Kingston and Funeral Mountains	Eastern Mojave
	Mojave and Silurian Valley	Western Mojave
	Owens River Valley	Western Mojave
	Panamint Death Valley	Western Mojave
	Pinto Lucerne Valley and Eastern Slopes	Western Mojave
	Piute Valley and Sacramento Mountains	Colorado Desert
	Providence and Bullion Mountains	Colorado Desert/Western Mojave
	West Mojave and Eastern Slopes	Western Mojave
Flat-tailed horned lizard	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
Mojave fringe-toed lizard	Cadiz Valley and Chocolate Mountains	—
	Kingston and Funeral Mountains	—
	Mojave and Silurian Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Piute Valley and Sacramento Mountains	—

Table II.3-32
DRECP Covered Species for Which Take Will Be Allocated

Covered Species	Ecoregion Subarea	Species-Specific Regions
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
Tehachapi slender salamander	West Mojave and Eastern Slopes	—
Bird		
Bendire's thrasher	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Kingston and Funeral Mountains	—
	Mojave and Silurian Valley	—
	Owens River Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Piute Valley and Sacramento Mountains	—
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
Burrowing owl	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Kingston and Funeral Mountains	—
	Mojave and Silurian Valley	—
	Owens River Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Piute Valley and Sacramento Mountains	—
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
California black rail	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Piute Valley and Sacramento Mountains	—
California condor	Owens River Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	West Mojave and Eastern Slopes	—
Gila woodpecker	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Piute Valley and Sacramento Mountains	—
Golden eagle	Cadiz Valley and Chocolate Mountains	Region 2
	Imperial Borrego Valley	Region 3

Table II.3-32
DRECP Covered Species for Which Take Will Be Allocated

Covered Species	Ecoregion Subarea	Species-Specific Regions
	Kingston and Funeral Mountains	Region 2
	Mojave and Silurian Valley	Region 2
	Owens River Valley	Region 1
	Panamint Death Valley	Region 1
	Pinto Lucerne Valley and Eastern Slopes	Region 2
	Piute Valley and Sacramento Mountains	Region 2
	Providence and Bullion Mountains	Region 2
	West Mojave and Eastern Slopes	Region 1
Greater sandhill crane	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Piute Valley and Sacramento Mountains	—
	Providence and Bullion Mountains	—
Least bell's vireo	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Kingston and Funeral Mountains	—
	Mojave and Silurian Valley	—
	Owens River Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Piute Valley and Sacramento Mountains	—
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
Mountain Plover	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	West Mojave and Eastern Slopes	—
Southwestern willow flycatcher	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Mojave and Silurian Valley	—
	Owens River Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Piute Valley and Sacramento Mountains	—
	West Mojave and Eastern Slopes	—
Swainson's hawk	Imperial Borrego Valley	—
	Mojave and Silurian Valley	—
	Owens River Valley	—
	Panamint Death Valley	—

Table II.3-32
DRECP Covered Species for Which Take Will Be Allocated

Covered Species	Ecoregion Subarea	Species-Specific Regions
	Pinto Lucerne Valley and Eastern Slopes	—
	West Mojave and Eastern Slopes	—
Tri-colored blackbird	Imperial Borrego Valley	—
	Mojave and Silurian Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
Yellow-billed cuckoo	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Kingston and Funeral Mountains	—
	Mojave and Silurian Valley	—
	Owens River Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Piute Valley and Sacramento Mountains	—
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
Yuma clapper rail	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Piute Valley and Sacramento Mountains	—
	West Mojave and Eastern Slopes	—
Fish		
Desert pupfish	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
Mohave tui chub	Kingston and Funeral Mountains	—
	Mojave and Silurian Valley	—
	West Mojave and Eastern Slopes	—
Owens pupfish	Owens River Valley	—
Owens tui chub	Owens River Valley	—
Mammal		
Bighorn sheep–intermountain habitat	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Kingston and Funeral Mountains	—
	Mojave and Silurian Valley	—
	Owens River Valley	—
	Panamint Death Valley	—

Table II.3-32
DRECP Covered Species for Which Take Will Be Allocated

Covered Species	Ecoregion Subarea	Species-Specific Regions
	Pinto Lucerne Valley and Eastern Slopes	—
	Piute Valley and Sacramento Mountains	—
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
Bighorn sheep–mountain habitat	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Kingston and Funeral Mountains	—
	Mojave and Silurian Valley	—
	Owens River Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Piute Valley and Sacramento Mountains	—
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
California leaf-nosed bat	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Kingston and Funeral Mountains	—
	Mojave and Silurian Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Piute Valley and Sacramento Mountains	—
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
Mohave ground squirrel	Mojave and Silurian Valley	—
	Owens River Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	West Mojave and Eastern Slopes	—
Pallid bat	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Kingston and Funeral Mountains	—
	Mojave and Silurian Valley	—
	Owens River Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Piute Valley and Sacramento Mountains	—

Table II.3-32
DRECP Covered Species for Which Take Will Be Allocated

Covered Species	Ecoregion Subarea	Species-Specific Regions
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
Townsend's big-eared bat	Cadiz Valley and Chocolate Mountains	—
	Imperial Borrego Valley	—
	Kingston and Funeral Mountains	—
	Mojave and Silurian Valley	—
	Owens River Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Piute Valley and Sacramento Mountains	—
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
Plant		
Alkali mariposa-lily	Owens River Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	West Mojave and Eastern Slopes	—
Bakersfield cactus	West Mojave and Eastern Slopes	—
Barstow woolly sunflower	Mojave and Silurian Valley	—
	West Mojave and Eastern Slopes	—
Desert cymopterus	Mojave and Silurian Valley	—
	West Mojave and Eastern Slopes	—
Little San Bernardino Mountains linanthus	Imperial Borrego Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
Mojave monkeyflower	Mojave and Silurian Valley	—
	Panamint Death Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	Providence and Bullion Mountains	—
	West Mojave and Eastern Slopes	—
Mojave tarplant	Owens River Valley	—
	Pinto Lucerne Valley and Eastern Slopes	—
	West Mojave and Eastern Slopes	—
Owens Valley checkerbloom	Owens River Valley	—
	West Mojave and Eastern Slopes	—
Parish's daisy	Pinto Lucerne Valley and Eastern Slopes	—
	West Mojave and Eastern Slopes	—
Triple ribbed milk vetch	Pinto Lucerne Valley and Eastern Slopes	—

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Table II.3-33
DRECP Take Allocation Ledger Template

				Total Plan-Wide (and NCCP) Take		Total BLM LUPA Take			GCP Take on Nonfederal Lands						
									Total GCP Take		*CEC Application*		*CSLC Application*		
Covered Species[1]	**Ecoregion Subarea[1]**	**Species-Specific Regions[1]**	**Total Suitable Habitat**	*Siting, Construction, and Terrestrial Operational Impacts*	*Bird and Bat Operational Impacts*	*Siting, Construction, and Terrestrial Operational Impacts*	*Bird and Bat Operational Impacts*	*BLM Initial Take Allocation*	*Siting, Construction, and Terrestrial Operational Impacts*	*Bird and Bat Operational Impacts*	*CEC Take Allocation*	*CEC Initial Take Allocation*	*CSLC Take Allocation*	*CSLC Initial Take Allocation*	*Future Available Take*

[1] See Table II.3-32 for full list.

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The following assumptions are incorporated in this approach:

- The Plan-wide take limit may not be exceeded.
- Take allocation can be transferred between permittees under the DRECP components within an ecoregion subarea with review and documentation through the DRECP Coordination Group.
- Permittees may voluntarily surrender their allocation at any time.
- Take may be transferred between ecoregion subareas under limited circumstances.
- If take limit is reached for a particular species in a particular ecoregion subarea, any further action would have to avoid that particular species before the project could proceed.
- Effects of transmission would be deducted from the take allocation based on the location of impacts and made available to transmission applicants.

Metrics

In general, the metric for take resulting from the construction of Covered Activities is the estimated ground disturbance of modeled suitable habitat that will result after application of avoidance and minimization CMAs. The metrics for take resulting from the operation of Covered Activities is the indirect loss of terrestrial habitat values and the estimated mortality for avian species (birds and bats).

For golden eagle, the metric for authorizing and tracking take will be measured as birds/year. Any anticipated loss of an eagle territory will be translated to birds/year (e.g., the loss of a territory will equate to the loss of 4.26 birds/year). See Appendix H for a detailed description of the approach for authorizing take of golden eagle.

Temporal Loss

The DRECP addresses the potential for temporal loss of resource values from the time they are affected by implementation of Covered Activities until appropriate compensatory activities are put in place. The requirement under DRECP is that compensation activities be initiated and/or completed within 12 months of the time the impact occurs (e.g., ground disturbance for construction activities or mortality due to operations), with a 6 month extension permitted subject to approval by the authority issuing the permit/approval for the project.

Requirements for conservation actions may vary. For example:

- For land acquisition forms of compensation, the entity receiving the fee and responsible for acquisition, or the project developer if such developer has elected to complete land acquisition in lieu of paying a fee, must demonstrate completion of

land acquisition or conservation easement and conveyance to the appropriate land management entity.

- For habitat restoration/enhancement forms of compensation, the appropriate entity must demonstrate completion of installation of plant materials and that initial (3–6 months) success criteria are met, recognizing full satisfaction of success criteria may extend for several years.
- For non-acquisition forms of compensation, time considerations may vary depending on whether the activity is action oriented (e.g., installation of fencing) or non-action oriented (e.g., a durability mechanism).

Requirements to address temporal loss under the DRECP may also address agency-specific requirements regarding rough proportionality (get ahead/stay ahead) and impact/mitigation (stay even).

Reporting

Status of take allocation and associated tracking will be part of DRECP compliance monitoring as documented in annual reporting. See Section II.3.1.3.4.1 for compliance monitoring requirements.

II.3.1.7 Regulatory Assurances Under the NCCP and the GCP

II.3.1.7.1 Regulatory Assurances Under the NCCP

Introduction

Within the context of the NCCPA, the purpose of the DRECP is to provide for the conservation of the Covered Species and the avoidance, mitigation, minimization, and compensatory measures required in connection with the incidental taking of Covered Species in the course of otherwise lawful and permitted activities within the Plan Area. The NCCPA provides that CDFW "may provide assurances for plan participants commensurate with long-term conservation assurances and associated implementation measures pursuant to the approved plan." (California Fish and Game Code, Section 2820, subd. [f]) These assurances are intended to provide both a degree of certainty regarding the overall costs associated with species mitigation and other conservation measures and durability and reliability to agreements reached between permittees and CDFW.

The assurances provided under the NCCPA do not prohibit or restrain CDFW, or any other public agency, from taking additional actions to protect or conserve Covered Species. CDFW and other public agencies may use the variety of tools at their disposal and take actions to reduce adverse impacts to ensure the needs of the Covered Species affected by unforeseen circumstances are adequately addressed.

Regulatory Assurances under the NCCPA

Under the NCCPA, CDFW may provide assurances to permittees (those plan participants who receive Section 2835 permits and execute an implementation agreement) commensurate with the long-term conservation assurances and associated implementation measures of the DRECP. In determining the level of assurances, if any, to provide, CDFW shall consider all of the following factors:

- The level of knowledge of the status of the Covered Species and natural communities
- The adequacy of analysis of the impact of take on Covered Species
- The use of the best available science to make assessments about the impacts of take, the reliability of mitigation strategies, and the appropriateness of monitoring techniques
- The appropriateness of the size and duration of the plan with respect to quality and amount of data
- The sufficiency of mechanisms for long-term funding of all components of the plan and contingencies
- The degree of coordination and accessibility of centralized data for analysis and evaluation of the effectiveness of the plan
- The degree to which a thorough range of foreseeable circumstances are considered and provided for under the adaptive management program
- The size and duration of the plan. (California Fish and Game Code, Section 2820, subd. [f][1][A]–[H])

Based on an evaluation of these factors, CDFW will determine whether to provide regulatory assurances and, if so, the proper scope and duration of such assurances.

The assurances provided to eligible permittees will seek to ensure that if there are unforeseen circumstances, no additional financial obligations or restrictions on the use of resources will be required of the eligible permittees without their consent. The NCCPA expressly states:

> If there are unforeseen circumstances, additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources shall not be required without the consent of the plan participants for a period of time specified in the implementation agreement, unless the department determines that the plan is not being implemented

consistent with the substantive terms of the implementation agreement. (California Fish and Game Code, Section 2820, subd. [f][2])

Notwithstanding California Fish and Game Code Section 2820(f), however, the NCCPA requires that CDFW suspend or revoke any permit, in whole or in part, if the continued take of a Covered Species would jeopardize its continued existence.

Eligible NCCP Permittees under the DRECP

Under the NCCPA, regulatory assurances may be provided to "plan participants" (California Fish and Game Code, Section 2820, subd. [f]). Prior to approval of the NCCP, a plan participant "means a signatory to the planning agreement," and upon approval of the NCCP, a plan participant "means the permittee and any local agency that is a signatory to the implementing agreement" (California Fish and Game Code, Section 2805, subd. [j][1]–[2]).

As a plan participant and permittee, regulatory assurances will be provided to CSLC according to terms and conditions to be set forth in the implementation agreement to be executed by CDFW, CSLC, and other implementing agencies as applicable.

Assurances may also be provided subsequently to individual project proponents seeking project-specific Section 2835 permits and future local government permittees seeking Section 2835 permits; provided, however, that the existence, scope, and duration of such assurances will be set forth in an implementation agreement to be executed by CDFW, the individual project proponent or local government permittee, and other implementing agencies if applicable.

Changed Circumstances

Ecological conditions in the Plan Area are likely to change as a result of future events and circumstances that may occur during the course of implementing the DRECP. CDFW seeks to identify circumstances that are reasonably foreseeable and could adversely affect the NCCP Reserve and other conservation measures in the Plan Area. To ensure successful implementation of the conservation strategy, the DRECP sets out measures designed to respond to these anticipated future changes.

Under the NCCPA, changed circumstances are defined as "reasonably foreseeable circumstances that could affect a covered species or geographic area covered by the plan" (California Fish and Game Code, Section 2805, subd. [c]). If a changed circumstance occurs within the permit area, CDFW may determine that additional conservation or mitigation measures are necessary. If such measures were addressed in the DRECP, their implementation is required. If such measures were absent from the Plan, CDFW will not require a permittee to undertake any additional conservation or mitigation without the

consent of the permittee as long as the Plan is found to be properly implemented by the permittee, to the extent the permittee is responsible for implementation. Properly implemented means that the commitments and the provisions of the DRECP, the EIR/EIS, the implementing agreement, and the Section 2835 permit have been or are being fully implemented to the extent they are the responsibility of the permittee.

Process to Identify Changed Circumstances

Either the Coordination Group or CDFW may identify the onset of a changed circumstance, using information obtained from monitoring, scientific study, or other sources. Once the Coordination Group or CDFW is aware that a changed circumstance has occurred or is likely to occur, they will take immediate steps to investigate and confirm the event. If a changed circumstance appears to have occurred, the Coordination Group or CDFW will notify the Executive Policy Group, the Adaptive Management Team, the Partners Working Group, and the Stakeholder Working Group.

After documenting the occurrence of a changed circumstance, the Coordination Group or CDFW will determine specific responsive actions that are consistent with the requirements set forth in this section and develop a schedule for their implementation.

Changed Circumstances under the NCCP

Section II.3.1.7.3 lists changed circumstances and planned responses considered under the DRECP for both the NCCP and the GCP.

Unforeseen Circumstances

Under the NCCPA, unforeseen circumstances are defined as "changes affecting one or more species, habitats, or natural communities or the geographic area covered by a conservation plan that could not reasonably have been anticipated at the time of plan development, and that result in a substantial adverse change in the status of one or more covered species" (California Fish and Game Code, Section 2805, subd. [k]).

In the event of unforeseen circumstances during the permit term, amendments to the NCCP may be proposed by the Coordination Group or CDFW to address these circumstances. CDFW and the Coordination Group will work together to identify opportunities to redirect resources to address unforeseen circumstances. However, it is intended that CDFW will not:

1. Require the commitment of additional land, water, or financial compensation by the permittees other than those agreed to elsewhere in the NCCP; or

2. Impose additional restrictions on the use of land, water, or natural resources otherwise available for use by the permittees under the original terms of the NCCP to mitigate the effects of the Covered Activities.

The extent to which CDFW provides such assurances will be set forth in the implementation agreement to be signed by each permittee. Permittees will be entitled only to those assurances that are set forth in the implementation agreement.

II.3.1.7.2 Regulatory Assurances Under the GCP

Assurances for Unforeseen and Changed Circumstances ("No Surprises" Rule)

The purpose of the GCP is to provide for the conservation of Covered Species through implementation of measures required to minimize and mitigate the incidental taking of Covered Species in the course of otherwise lawful and permitted activities within the GCP Permit Area. In accordance with the Habitat Conservation Plan ("No Surprises") Assurances Rule (63 FR 8859, as codified in 50 CFR 17.3, 17.22[b] and 17.32[b]), except as otherwise required by law and/or provided under the terms of the GCP and except for unforeseen circumstances as defined in the regulations cited above, no further mitigation or compensation shall be required by USFWS to address impacts of Covered Activities undertaken by any GCP permittee under the ESA. Please refer to Appendix M, General Conservation Plan, for details on USFWS regulatory assurances under "No Surprises."

No Surprises assurances are attached to an incidental take permit upon issuance; each permittee under the GCP would receive No Surprises assurances. The USFWS will not require from any GCP permittee the commitment of additional land or financial compensation or additional restrictions on the use of land or other natural resources with regard to Covered Activities and their impact on Covered Species beyond that provided by the permit issued under the GCP, as long as the permittee is properly implementing the terms and conditions of the permit, the GCP. In the event that the USFWS makes a finding of "unforeseen circumstances" and such unforeseen circumstances warrant the requirement of additional mitigation, enhancement, or compensation measures, any such additional measures would be restricted to modifying the management of the permittee's mitigation lands within the DRECP Conservation Area, and shall be the least burdensome measures available to address the unforeseen circumstances.

"Unforeseen circumstances" (50 CFR 17.3) means any significant, unanticipated adverse change in the status of GCP Covered Species or their habitats or any significant unanticipated adverse change in impacts within the GCP Permit Area in accordance with 63 FR 8859 (February 23, 1998). In contrast, "changed circumstances" are defined under the No Surprises Rule as changes in circumstances affecting a Covered Species or geographic

area covered by a conservation plan, such as the GCP, that can reasonably be anticipated and planned for by permit applicants and USFWS.

Changed circumstances potentially affecting permittee Covered Activities or mitigation lands within the DRECP Conservation Area are defined as future events that may be reasonably foreseeable to occur during the life of the permit issued under the GCP, and that such an event may negatively affect the Covered Species and/or their habitats. Changed circumstances addressed by the GCP include: (1) prolonged drought; (2) changes in fire frequency, intensity, or extent; (3) increased proliferation of known non-native species and/or invasion by new non-native species; (4) changes in hydrology and groundwater resources (including lowered water tables); (5) changes in renewable energy technologies, or in measures to avoid or minimize adverse impacts to Covered Species; (6) population declines of Covered Species unrelated to implementation of permits issued under the GCP; (7) the general impacts of climate change on each of these circumstances, and (8) new listings of species not covered by the GCP and designation or revision of critical habitat for a Covered or Non-Covered Species. Permittees would be responsible for monitoring, reporting, and responding to changed circumstances on their project sites. The DRECP Coordination Group would be responsible for monitoring, reporting, and responding to changed circumstances in the DRECP Conservation Area through implementation of the MAMP.

II.3.1.7.3 Changed Circumstances

This section describes how changed circumstances would be handled under the DRECP and includes a discussion of the following topics:

- Prolonged drought
- Fire (frequency, intensity, extent)
- Non-native species
- Changes to hydrology and groundwater resources
- Renewable energy technologies
- Population declines of Covered Species
- New listings of species not covered under the GCP (including designation or revision of critical habitat for a Covered Species or Non-Covered Species) or the NCCP.

Permittee would be responsible for monitoring, reporting and responding to changed circumstances on their project sites. The DRECP Coordination Group would be responsible for monitoring, reporting and responding to changed circumstances in the DRECP Conservation Area through implementation of the MAMP.

II.3.1.7.3.1 Prolonged Drought

Drought is a cyclical weather phenomenon that is beyond human control. Drought is not uncommon in the California deserts, and it is a phenomenon to which local natural communities and species have adapted over time. Prolonged drought conditions may adversely affect Covered Species if they are unable to adapt.

Risk Assessment

For the purpose of identifying changed circumstances requiring a management response, drought is defined as climatic drought of at least 3 years in length. Drought conditions persisting longer than 3 years are considered conditions of prolonged drought, and will serve as a trigger for closely monitoring the effects of climatic drought on Covered Species and responding as appropriate to ensure authorized take levels for Covered Activities are not exceeded and that progress towards achieving BGOs is not compromised within the DRECP Conservation Area.

Appendix P (Climate Change) generally discusses precipitation records and the general periodicity of dry and wet years in the Mojave and Colorado/Sonoran deserts. Multiyear droughts of statewide scale occur relatively infrequently, and usually last for 3-4 years. For example, since 1900, there have been nine periods of drought for 3 years or more (1918–20, 1923–26, 1928–35, 1947–50, 1959–62, 1976–77, 1987–92, 2001–02, 2007–09) (California Department of Water Resources 2012). Based on these data, and the fact that drought is an expected occurrence in the California deserts, a prolonged drought substantially affecting Covered Species is likely to occur during implementation of the DRECP through 2040. During the first 5 years of DRECP implementation (i.e., the first 5 years after a ROD for a Final DRECP and EIR/EIS is signed), USFWS and CDFW will work with the DRECP Coordination Group and permittees to identify species vulnerable to drought, update the risk assessment, and create a long-term, species-specific or ecoregion-specific response.

Preventive Measures

No measures are available to prevent climatic drought. Measures to ameliorate the effects of prolonged drought may involve providing artificial water sources as feasible for Covered Species such as bighorn sheep that are adversely affected by drought. However, due to the unpredictable yet expected influence of climate change on temperatures and precipitation patterns, the DRECP Coordination Group will implement measures to monitor the effects of drought, as defined above, on Covered Species in the DRECP Conservation Area as part of the MAMP.

Planned Response

If a prolonged climatic drought occurs within the Plan Area, the DRECP Coordination Group will (1) assess the damage caused by the drought within the DRECP Conservation Area, (2) recommend actions to ameliorate the effects of the climatic drought on Covered Species, (3) update the risk assessment, and (4) create a long-term, species-specific or ecoregion-specific response through the adaptive management process outlined in the MAMP.

II.3.1.7.3.2 Fire (Frequency, Intensity, Extent)

A high density of non-native plants, particularly invasive grasses, can facilitate the spread of wildfires in desert habitats where vegetation would otherwise be too sparse. Such fires can adversely alter habitats that have not evolved with natural fire disturbance regimes. There are little or no data on the vulnerability of desert species to increased incidences of wildfire due to the proliferation of non-native plants. Habitat alterations resulting from wildfire often enhance conditions for increased invasion by non-native plants, with impacts across trophic levels that could last decades or longer.

Risk Assessment

For the purpose of identifying changed circumstances requiring a management response, a fire event that may adversely affect Covered Species and their habitats is fire in a natural community that is not typically subjected to fire and is not adapted to it. The occurrence of such a fire in the Plan Area will serve as a trigger for closely monitoring the effects of fire on Covered Species and responding as appropriate to ensure authorized take levels for Covered Activities are not exceeded and that progress towards achieving BGOs is not compromised within the DRECP Conservation Area.

During the first 5 years of DRECP implementation (i.e., the first 5 years after a ROD for a Final DRECP and EIR/EIS is signed), USFWS and CDFW will work with the DRECP Coordination Group and permittees to identify species vulnerable to fire, update the risk assessment, and create a long-term, species-specific or ecoregion-specific response. The DRECP Coordination Group will explore the relationship between areas occupied by non-native plants and historical fire occurrences in the DRECP Conservation Area, and conduct landscape level monitoring under the MAMP to document the occurrence of fire within the Plan Area, including location, frequency, intensity, and extent.

Preventive Measures

For non-fire adapted vegetation communities within the DRECP Conservation Area preventive measures include creating new fuel breaks/fire breaks or redesigning and reconfiguring existing fuel breaks/fire breaks; collaboration among the DRECP

Coordination Group, local fire agencies, and permittees to improve fire suppression preparedness and identify appropriate suppression strategies that minimize habitat damage; and developing effective methods to control establishment and proliferation of non-native plants. The Coordination Group will be responsible for implementing preventive measures on DRECP Conservation Area lands; permittees will be responsible for these activities at their project sites. Due to the unpredictable yet expected influence of climate change on natural desert fire regimes, the DRECP Coordination Group will implement measures to monitor the occurrence of fire on Covered Species in the DRECP Conservation Area as part of the MAMP. Permittees will be responsible for monitoring the effects of fire on their project sites.

Planned Response

If a fire occurs within non-fire adapted natural communities in the DRECP Conservation Area, the DRECP Coordination Group will review the cause of the fire; assess fire damage to Covered Species and their habitat; and evaluate the effectiveness of fire prevention, response, and recovery measures. After that review, the DRECP Coordination Group will develop and implement the following: (1) a monitoring program through the MAMP to document natural re-growth within the damage area for an appropriate period; (2) an action plan to improve habitat conditions if monitoring indicates natural re-growth is not occurring and Covered Species will be adversely affected due to the lack of natural re-growth; (3) an updated risk assessment; and (4) a long-term, species-specific or ecoregion-specific response through the adaptive management process outlined in the MAMP. Similarly, permittees will review the incidence of fire on their project sites and follow the same four-step process for planning a long-term response.

II.3.1.7.3.3 Non-Native Species

Invasive non-native plants are currently present within areas identified in the Interagency Plan-wide Conservation Priority Areas, and may include areas that will be acquired as permittee mitigation under the DRECP.

Risk Assessment

For the purpose of identifying changed circumstances that require a management response, invasion or proliferation of non-native species is defined as an occurrence of a new non-native species or increased proliferation of existing non-native species within the DRECP Conservation Area. Documentation of such occurrences will serve as a trigger for closely monitoring the abundance and distribution of non-native species and any adverse effects to Covered Species, and responding as appropriate to ensure authorized take levels for Covered Activities are not exceeded and that progress towards achieving BGOs is not compromised within the DRECP Conservation Area.

Monitoring and appropriate management of non-native species in the DRECP Conservation Area by the DRECP Coordination Group are generally described in the MAMP. Monitoring will identify existing non-native species in the DRECP Conservation Area so that expansion into previously unaffected habitats, and invasion of new non-native species, can be identified as these situations occur. In addition, during the first 5years of DRECP implementation (i.e., the first 5 years after a ROD for a Final DRECP and EIR/EIS is signed), USFWS and CDFW will work with the DRECP Coordination Group to identify Covered Species and habitats vulnerable to invasive non-native species, update the risk assessment, and create a long-term, species-specific or ecoregion-specific response.

Preventive Measures

Monitoring will enable the DRECP Coordination Group to assess the spread of invasive non-native species and their impacts on Covered Species within the DRECP Conservation Area, and the effectiveness of any control measures that are implemented. The MAMP's monitoring program increases the probability of early detection of new non-native species or proliferation of existing non-native species. Early detection will improve the chances of successfully reducing or controlling these threats and their adverse impacts on Covered Species, especially due to the unpredictable yet expected influence of climate change on the spread of invasive species.

Planned Response

The DRECP Coordination Group will assess adverse impacts to Covered Species and their habitats resulting from invasive species and develop and initiate the following: (1) control measures to address the threats to Covered Species, (2) an updated risk assessment, and (3) a long-term, species-specific or ecoregion-specific response through the adaptive management process outlined in the MAMP.

II.3.1.7.3.4 Changes to Hydrology and Groundwater Resources

Substantial impacts to hydrology and groundwater tables that could adversely affect Covered Species and their habitats on mitigation lands within the DRECP Conservation Area could result from flow diversions and groundwater withdrawals used to clean and maintain renewable energy facilities, or from disruption of existing flows and washes resulting from ground disturbance for construction. The effects of climate change and prolonged drought also are likely to affect hydrology and groundwater in the DRECP Conservation Area.

Risk Assessment

For the purpose of identifying changed circumstances requiring a management response, changes to hydrology would be impacts to natural flow regimes that adversely affect aquatic, wetland, and riparian Covered Species and their habitats within the DRECP Conservation Area. Changes in groundwater resources would be those resulting in lowered water table or aquifer levels where an increase in the depth to groundwater adversely affects water availability to Covered Species and their habitats. As discussed above, drought conditions persisting longer than 3 years will be considered conditions of prolonged drought, and will serve as a trigger for closely monitoring the effects of climatic drought on hydrology and groundwater, any adverse effects to Covered Species, and responding as appropriate to ensure authorized take levels for Covered Activities are not exceeded and that progress towards achieving BGOs is not compromised within the DRECP Conservation Area.

As described in the MAMP, the DRECP Coordination Group will monitor hydrologic and groundwater regimes that support Covered Species and their habitats in the DRECP Conservation Area. During the first 5 years of DRECP implementation (i.e., the first 5 years after a ROD for a Final DRECP and EIR/EIS is signed), USFWS and CDFW will work with the DRECP Coordination Group and permittees to identify species vulnerable to hydrologic and groundwater reductions, and areas where changes to these resources are likely to occur.

Preventive Measures

Due to the unpredictable yet expected influence of climate change on desert water resources, the DRECP Coordination Group will monitor the effects of drought, and baseline changes to hydrology and groundwater, on Covered Species in the DRECP Conservation Area as part of the MAMP. Monitoring will increase the chances of early detection of such changes, so that the DRECP Coordination Group can develop measures to counteract the adverse effect of those changes to Covered Species. As discussed in the MAMP, the DRECP Coordination Group will use appropriate methods and technology (which may change over time) to monitor hydrology and groundwater levels in the DRECP Conservation Area.

Planned Response

If monitoring detects a substantial change in hydrology or lowering of the water table or a decline in the status of Covered Species related to these situations, the DRECP Coordination Group will assess the adverse effects to Covered Species and take the following actions: (1) develop feasible measures to ameliorate the adverse effects to Covered Species and their habitats, (2) recommend actions to ameliorate the effects of the climatic drought on Covered Species, (3) update the risk assessment, and (4) create a long-term, species-

specific or ecoregion-specific response through the adaptive management process outlined in the MAMP.

II.3.1.7.3.5 Renewable Energy Technologies

The REAT agencies assume that renewable energy technology will continue to evolve and improve in efficiency for power generation in ways that cannot be predicted today. For the purpose of identifying changed circumstances that require a management response, a change in renewable energy technology would be a change to Covered Activities (e.g., design, construction, operations, and maintenance) that results in impacts to Covered Species that are not analyzed in the Draft DRECP and EIR/EIS. While some technological changes may reduce environmental impacts, other changes may involve new or different environmental impacts that would adversely affect Covered Species in ways that are not addressed in the DRECP. Because the particular infrastructure and impacts of new technologies are not foreseeable at this time, any new technologies that are not described and analyzed as Covered Activities in the Draft DRECP and EIR/EIS are not considered as changed circumstances that can be adequately addressed under adaptive management. Therefore, the DRECP does not provide an adaptive management strategy for implementing new technologies that adversely affect Covered Species. If a new technology would result in impacts to Covered Species that are not analyzed in the DRECP or EIR/EIS, an amendment to the DRECP would be required to cover the new technology under the NCCP and GCP.

It is reasonably foreseeable that new technologies or techniques will be developed that reduce the operational impacts of Covered Activities to ecosystems and wildlife. Implementation of such new technologies or techniques to avoid or minimize impacts to Covered Species would not result in increased levels of incidental take and thus are considered as appropriate changed circumstances under the DRECP. Examples of techniques to minimize impacts to wildlife include more effective bird diverter devices on transmission lines, remote sensing of nearby wildlife for predicting the need to curtail facility operations, and cost-effective ways to exclude birds and bats from evaporation ponds. Improved generation technologies also may be developed that would reduce operational impacts to birds, such as non-reflective solar panels or wind turbines with reduced rotor-swept areas and rotor speeds.

Risk Assessment

For the purpose of identifying changed circumstances requiring a management response, new techniques would be those documented in the scientific literature or industry reports as likely to effectively avoid or minimize operational impacts of Covered Activities to biological resources. The DRECP Coordination Group will keep informed of technological advances in renewable energy development world-wide. If

the DRECP Coordination Group determines that new measures documented would be likely to effectively reduce the risk of operational impacts to Covered Species, such measures may be added as CMAs for Covered Activities.

Preventive Measures

The USFWS and CDFW will also require permittees, to the extent feasible based on cost, to implement new techniques to reduce operational impacts to Covered Species. Permittees will monitor the effectiveness of the new techniques in reducing incidental take of Covered Species in annual reports to the USFWS, CDFW and DRECP Coordination Group. Permittees who wish to repower or reconfigure their existing facilities to take advantage of improved renewable energy infrastructure may submit a proposal to the DRECP Coordination Group for review as a modification to the DRECP (including the GCP and NCCP). The proposal must document how the new technology would reduce the level of incidental take of Covered Species, using reports from the scientific literature.

Planned Response

If permittee monitoring reports indicate the success of new avoidance and minimization measures for DRECP Covered Activities, the USFWS and CDFW will require the new measures as terms and conditions of any new permits issued under the GCP and NCCP. Additionally, the DRECP Coordination Group will (1) continue to monitor the new preventive measures, and other new measures documented in the scientific literature; (2) update the risk assessment; and (3) create a long-term, species-specific or ecoregion-specific response for requiring implementation of new measures through the adaptive management process outlined in the MAMP.

II.3.1.7.3.6 Population Declines of Covered Species

Populations of Covered Species may decline for reasons unrelated to implementation of permits issued under the GCP and NCCP, to the extent that no additional mortality sources can be sustained and we would need to reduce or cease new authorizations of incidental take. General causes for population declines of desert species unrelated to renewable energy development include, but are not limited to, loss of individuals and/or habitat due to other types of land use and development, disease and toxicity responses, population dynamics effects due to small population size, and inability to adapt to climate change. Examples of potential causes for substantial population declines include the spread of lethal diseases such as upper respiratory disease in desert tortoise; a substantial and prolonged population decline of California condors due to lead poisoning; reduced irrigation of agricultural lands that results in less available habitat for Covered Species; and species declines of bird populations or desert pupfish in the Imperial Valley due to receding water levels in the Salton Sea.

This process for addressing population declines of Covered Species does not apply to golden eagles that are included as Covered Species under the DRECP and permits issued under the GCP and NCCP. An adaptive management process for monitoring take of golden eagles and reassessing take levels every 5 years is outlined in the golden eagle CMAs and further described under the process for adaptive management associated with requirements of the Eagle Act in Appendix H.2.9. For permits that include golden eagles as a Covered Species, permittees must agree to implement the terms and conditions of the adaptive management process outlined for golden eagles in the CMAs and Appendix H.2.9.

Risk Assessment

For the purpose of identifying changed circumstances requiring a management response, population declines unrelated to Covered Activities would be changes in numbers, distribution, or reproduction of Covered Species that, in conjunction with levels of authorized incidental take, would adversely affect the conservation of Covered Species within the DRECP Conservation Area to the extent of precluding adequate compensation for incidental take, or that would preclude issuance of further incidental take permits for affected Covered Species. During the first 5 years of DRECP implementation (i.e., the first 5 years after a ROD for a Final DRECP and EIR/EIS is signed), USFWS and CDFW will work with the DRECP Coordination Group to identify species vulnerable to population declines and particular priority conservation areas where population status can be monitored by focused surveys. In addition, USFWS and CDFW will work with the DRECP Coordination Group to stay mutually informed of the status of each Covered Species throughout its range. If it is determined that a population decline of a Covered Species is occurring, for example from MAMP monitoring reports or from reports documented in the scientific literature, that will identify the trigger for closely monitoring the status of Covered Species within the DRECP Conservation Area and the level of operational impacts to Covered Species on permittee project sites. Monitoring will allow the DRECP Coordination Group and permittees to respond as appropriate to ensure authorized take levels for Covered Activities are not exceeded and that progress towards achieving BGOs is not compromised within the DRECP Conservation Area.

Preventive Measures

The DRECP Coordination Group will keep informed on the status of each Covered Species throughout its range and within the DRECP Conservation Area, and will conduct more focused monitoring as feasible for declining species. Monitoring will enable the DRECP Coordination Group to increase the chances of early detection of such declines, and design and implement appropriate preventive measures.

Planned Response

As discussed in the MAMP, the DRECP Coordination Group will use appropriate methods to monitor Covered Species in the DRECP Conservation Area. Permittees will monitor incidental take on their project sites. If monitoring detects a substantial decline in numbers, distribution, or reproduction of Covered Species, or a level of incidental take that approaches, equals, or exceeds authorized take levels, the DRECP Coordination Group will take the following actions: (1) recommend and implement research to determine if Covered Species are declining in the Plan Area, such as contracting expert scientists to develop population viability analyses; (2) research and develop feasible measures to ameliorate the effects of population declines on Covered Species and their habitats so that authorized take levels are not exceeded; (3) update the risk assessment; and (4) create a long-term, species-specific or ecoregion-specific response through the adaptive management process outlined in the MAMP. If substantial declines continue, it may be necessary to cease issuing any new permits under the GCP and NCCP.

II.3.1.7.3.7 New Listings of Species Not Covered by the DRECP

New Listings of Species Under ESA Not Covered by the GCP and Designation or Revision of Critical Habitat for a Covered or Non-Covered Species

Table II.3-2 lists the Covered Species addressed by the DRECP and GCP. The USFWS may list additional species under the federal ESA that are not covered by the GCP. If a non-listed species that is not covered by the GCP is adversely affected by GCP Covered Activities, and such species are listed under the ESA during the term of the GCP (i.e., through 2040), we would consider this to be a Changed Circumstance.

Critical habitat has been designated for some of the federally listed species covered by this GCP. If in the future, critical habitat that is currently designated for a Covered Species is revised, or critical habitat is newly designated for a Covered Species, and such designated or revised critical habitat may be affected by one or more Covered Activities, or if critical habitat is designated or revised for a Non-Covered Species and such designated or revised critical habitat may be affected by one or more Covered Activities, such revision or designation of critical habitat would constitute a Changed Circumstance.

Risk Assessment

If new species listings or new designations or revisions of critical habitat occur, USFWS in consultation with the permittees will reevaluate the GCP and incidental take permits issued under the GCP, and the GCP Covered Activities will be modified, as necessary, to ensure that any activities covered under the GCP and permits are not likely to result in take of or

jeopardy to the newly listed Non-Covered Species, or the destruction or adverse modification of the newly designated or revised critical habitat.

Preventive Measures

Permittees under the GCP would implement the modifications to the GCP Covered Activities identified by the USFWS as necessary to avoid the likelihood of take of or jeopardy to the newly listed Non-Covered Species, or the destruction or adverse modification of the newly designated or revised critical habitat. Permittees would continue to implement such modifications until such time as permittees have applied for and the USFWS has approved an amendment of the permit, in accordance with applicable statutory and regulatory requirements, to cover the newly listed Non-Covered Species or address the newly designated or revised critical habitat or until the USFWS notifies the permittees in writing that the modifications to the GCP Covered Activities are no longer required to avoid the likelihood of take of or jeopardy to the newly listed Non-Covered Species, or the destruction or adverse modification of the newly designated or revised critical habitat.

Planned Response

Avoidance measures designed to ensure that Covered Activities are not likely to result in take of or jeopardy to newly listed, Non-Covered Species, or the destruction or adverse modification of the newly designated or revised critical habitat, will include the following: (1) evaluation of Covered Activities with respect to potential effects on the newly listed species or newly designated or revised critical habitat, including assessment of suitable habitat for the newly listed species within the areas potentially affected by the proposed Covered Activities, and surveys for the newly listed species, as appropriate, using accepted protocols; (2) evaluation of Covered Activities and whether the affected newly designated or revised critical habitat would remain functional to serve its intended conservation value for the species; and (3) implementation of measures to avoid impacts to the newly listed species or newly designated or revised critical habitat based on the results of the data collected in (1) and (2) above and the evaluation of those data in the context of the design of the Covered Activities. Notwithstanding the foregoing, the incidental take permits issued under the GCP may be suspended or revoked if continuation of the permits would result in take of or jeopardy to the newly listed Non-Covered Species, or the destruction or adverse modification of the newly designated or revised critical habitat.

New Listing of Species Under CESA Not Covered Under the DRECP NCCP

Nature of Changed Circumstance

The California Fish and Game Commission (CFGC) may list additional species that occur in the Plan Area as threatened or endangered under CESA. In the event CFGC lists a species

that occurs within the Plan Area but is not covered by the DRECP, the provisions of this changed circumstance will be triggered. A new species listing of a Covered Species will not trigger this changed circumstance because the DRECP already anticipates such actions by providing for the conservation of each Covered Species. For that reason, take coverage for a newly listed Covered Species will be automatic and will not require any amendment or modification of the DRECP, the implementation agreement, or the Section 2835 permit.

Planned Responses

Upon a new CESA listing of a species not covered by the DRECP, the Coordination Group will undertake the measures described above for new listings under ESA except the provisions regarding critical habitat will not apply.

If CFGC lists a species that is not a Covered Species as threatened or endangered or designates the species as a candidate species, the Coordination Group may request that CDFW add the species to the relevant take authorizations issued pursuant to the DRECP. In determining whether to seek take coverage for the species, the Coordination Group will consider, among other things, whether the species is present in the Plan Area, whether Covered Activities could result in incidental take of the species, and whether existing conservation measures benefit the species and avoid and minimize effects of Covered Activities on the species.

II.3.1.8 Cost and Funding

This section estimates costs of, and identifies potential funding sources for, implementing the DRECP biological and conservation and mitigation program for Covered Species under the GCP and the NCCP. The purpose of the cost and funding analysis in the section is to meet requirements in the ESA and the NCCPA regarding assurances of adequate funding for implementation of HCPs and NCCPs.

This section does not include a discussion of the cost and funding for the implementation of mitigation for resources other than biological resources or for activities other than Covered Activities. These other costs could include costs associated with the requirements imposed during the licensing and environmental review process, costs for nonbiological mitigation (e.g., cultural resources, recreational resources, visual resources, and wilderness characteristics), and costs for decommissioning and closure. These costs would be addressed separately on a project-by-project basis through the BLM right-of-way process, CEC licensing process, and CSLC leasing process, and other yet-to-be identified processes such as a county permitting process, as applicable.

Unlike some multispecies habitat conservation plans, the DRECP will not be funded through a set of standard fixed fees on a per-acre or other unit basis. Instead, costs will be

recovered through mitigation fees determined and collected on a project-by-project basis. It was determined that the range of potential mitigation actions varied too widely by both Covered Activities and geography to set an appropriate fee schedule. The costs estimates projected here are intended to guide policymakers and to provide stakeholders and potential applicants with a reasonable estimate of project-related costs. The costs and fees for any one individual project or covered activity will likely differ from any specific values presented here. The structure and elements of the implementation fee is discussed further below in the funding section.

II.3.1.8.1 Cost to Implement the GCP and NCCP Biological Conservation and Mitigation Program

Scope and Purpose of the Cost Analysis

The actions discussed in this Plan address the requirements of the GCP and NCCP and are not limited to compensatory mitigation. The NCCP is designed to achieve the DRECP NCCP BGOs; compensatory mitigation is the primary way in which the DRECP NCCP BGOs will be achieved, but not the only way. However the requirements for compensatory mitigation drive much of the scope of the GCP and NCCP, which are DRECP's.

To be covered under the DRECP, project proponents of Covered Activities will be required to pay the cost of implementing applicable CMAs, which include actions that provide compensatory mitigation. In most cases, compensatory mitigation will include the conservation of land containing habitat for Covered Species. Natural communities and other habitat that support Covered Species are conserved to offset impacts to Covered Species. Compensatory mitigation for impacts to Covered Species will also include a number of other conservation actions, such as habitat restoration, land management actions, removal of threats or causes of mortality for Covered Species, and other actions and measures more fully described in Section II.3.1.2.5.7.

This analysis uses two sets of actions as a surrogate for all forms of compensatory mitigation—land acquisition and a selection of habitat restoration actions.

The conservation of land for compensatory mitigation may be accomplished in variety of ways.

- If land is bought *in fee simple*, it can be protected and managed for Covered Species; proponents of Covered Activities may purchase properties and transfer them to the CDFW or another governmental entity, special district, or non-profit organization

qualified to hold and manage property for the benefit of Covered Species pursuant to California Government Code Sections 65965–65968.[6]

- If land is protected through the purchase of *conservation easements* that protect the conservation values of the land in perpetuity,[7] land uses that are incompatible with the conservation of Covered Species can be prohibited. Conservation easements may be held by CDFW or another governmental entity, special district, or non-profit organization qualified to hold conservation easements pursuant to California Government Code Sections 65965–65968.

For the purposes of the analysis presented here, the assumption is that 85% of the acreage is acquired in fee simple and 15% through easements; actual acquisition patterns could vary substantially, both in total and over time. The predominant reliance on fee simple acquisition is made because land acquisition costs can be estimated more accurately and reliably than other kinds of conservation actions. The assumption does not limit or reflect a disagreement with the intent to use a variety of actions for compensatory mitigation purposes and to achieve Step-Down Biological Objectives.

The non-acquisition actions included in this analysis are related to habitat restoration and protection. The analysis focuses on four types of actions that are expected to be the predominant methods at this time, but by no means do these represent the entire universe of such actions. Those types include:

- Habitat enhancement,
- Fencing and signage,
- Roost habitat creation, enhancement, and protection,
- Predator, cowbird, or starling control

The assumptions for these analyses are discussed further in Appendix I.

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6 Such lands may be obtained in a number of ways outside of direct cash transactions, but these will among willing sellers and willing buyers.

7 A conservation easement is a partial interest in land that can be transferred to a qualified land conservancy or government entity. The purpose is to conserve or protect the land. Conservation easements typically restrict allowable uses of the land by prohibiting development and sometimes restricting or requiring particular management activities. A conservation easement is legally binding in perpetuity.

Scope of Mitigation Opportunities

Mitigation on Privately Owned Lands

For purposes of this cost analysis, the cost estimate assumes a mix of compensatory mitigation will be in the form of land acquisition, all on privately held lands, and that the remaining compensation will be in the form of non-acquisition actions on both privately and publicly held land. Table II.3-34 shows the mix by county.

Table II.3-34
Proportion of Acquisition and Non-Acquisition Compensation

County	Acquisition	Non-Acquisition
Imperial	81.2%	18.8%
Inyo	67.6%	32.4%
Kern	80.2%	19.8%
Los Angeles	80.2%	19.8%
Riverside	62.1%	37.9%
San Bernardino	68.8%	31.2%
San Diego	85.0%	15.0%
Total	73.7%	26.3%

Mitigation on Publicly Owned Lands

This analysis assumes that mitigation on publicly owned lands will be limited to non-acquisition habitat restoration and protection activities. Those measures will be implemented on federal, state or local government property when biologically appropriate for meeting Step-Down Biological Objectives. The cost analysis makes no specific assumption about the proportion of non-acquisition mitigation that will occur on public versus private lands because the analysis does not assume that costs differ by land ownership.

However, in actual implementation certain lands held by local and state government agencies may be acquired. For example, agricultural lands retired by the Imperial Irrigation District to comply with conservation measures to provide for water transfers to Metropolitan Water District of Southern California and San Diego County Water Authority may be available for acquisition in the future. Federal public lands are unlikely to be considered for acquisition.

II.3.1.8.2 Cost Estimate Methodology

This section provides estimates for the overall cost of purchasing, restoring and managing lands to fulfill compensatory mitigation requirements for impacts to Covered Species from Covered Activities under each of the six alternatives. A discussion about options for funding this activity follows. More detail is contained in Appendix I.

Description of the Cost Estimation Model and Scenario Analysis

The DRECP Mitigation Cost Model computes the total estimated cost for all mitigation projects on private and public residential, agricultural and open space lands in Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties.

The cost estimation model can identify acreage acquisition and management costs within each county segmented by land use. The model estimates potential costs for a selected Alternative using a set of assumptions and parameters about the cost categories, generation build-out, acreage to be acquired or managed for mitigation, and variations in economic and financial parameters. The cost data and assumptions in the cost categories are detailed in Appendix I.

Nearly all of the model inputs can be altered by analyst inputs and selections. This allows the analyst to generate costs for a variety of scenarios. Using the project parcel and acre counts, the model computes per parcel and per acre costs for each of the projects and for the total combined projects. The *mid-level cost scenario* uses the combined project costs, and, with the exception of escrow/closing costs, the *high* and *low scenarios* use the maximum and minimum individual project costs, respectively. The various scenario assumptions are discussed in more detail in the following sections.

Program administrative costs are also included. The assumptions for those costs are detailed in Appendix I.

II.3.1.8.3 Cost Evaluation Assumptions and Forecasts

The cost model is driven by specific forecasts and assumptions drawn from the environmental planning and analysis developed for the NCCP and GCP. Forecasts and assumptions about economic and financial conditions also affect the analysis. Appendix I describes the methods and data used to develop these forecasts and assumptions.

II.3.1.8.3.1 Number and Timing of Projects

Scenarios have been developed for the implementation of compensatory mitigation acquisitions over time. The location and timing of Covered Activities will ultimately drive when land will need to be purchased. The timing of the purchase of lands for compensatory

mitigation will affect the total discounted cost over the planning period to 2040 or "net present value" (NPV)[8] cost of the overall NCCP and GCP. The time value of money affects overall implementation costs. This in turn will affect the funding requirements. If land is purchased far in the future, implementation fee revenues and other funds collected now can earn interest to help fund those purchases. The forecast scenarios used are described in Appendix I.

Land Potentially Available for Covered Species Mitigation

The model assumes a finite number of private lands are potentially available for mitigation in the Plan Area. The DRECP estimates the total amount of private land potentially available for purchase for compensatory mitigation within Biological Conservation Planning Areas for each alternative. Land appropriate for purchase includes all acres within Biological Conservation Planning Areas and private in-holdings within BLM LUPA Conservation Land Designations. This analysis assumes that lands will be purchased for compensatory mitigation in Biological Conservation *Priority* Areas within the county where the Covered Activity impacts occur. If private lands are not available within such Biological Conservation *Priority* Areas, the analysis assumes lands would be purchased from the remaining Biological Conservation *Planning* Areas within that county. If no more private land is available within the county, the analysis assumes that lands would be purchased within Biological Conservation *Priority* Areas in other counties. Costs are provided by county, rather than by ecoregion subarea, because land cost information varies from county to county, and land costs are different from county to county. Appendix I shows a breakdown of available acreage for each alternative.

Planning and monitoring are the responsibility of the Coordination Group will also need to be funded. Detailed descriptions of these plans/monitoring requirements are included in the MAMP and CMAs, Sections II.3.1.3 and II.3.1.2.5. The basis for developing costs of planning and monitoring requirements are included Appendix I. Specific planning and monitoring costs are not included in this analysis because of a lack of sufficient data and projections to compile an accurate estimate.

[8] " (T)he net present value (NPV)… of a time series of cash flows, both incoming and outgoing, is defined as the sum of the present values (PVs) of the individual cash flows. In the case when all future cash flows are incoming …and the only outflow of cash is the purchase price, the NPV is simply the [discounted] PV of future cash flows minus the purchase price (which is its own PV). NPV is a central tool in discounted cash flow (DCF) analysis, and is a standard method for using the time value of money to appraise long-term projects. Used for capital budgeting, and widely throughout economics, finance, and accounting, it measures the excess or shortfall of cash flows, in present value terms, once financing charges are met." (http://www.princeton.edu/~achaney/tmve/wiki100k/docs/Net_present_value.html)

II.3.1.8.4 Summary of Estimated Costs

II.3.1.8.4.1 Cost Estimate for Acquiring Compensation Lands the Preferred Alternative

The total costs for acquiring and managing lands for the DRECP over the planning period to 2040 is shown in Table II.3-35. The mid-case acquisition cost estimate is $0.76 billion. The estimate in the low cost scenario is $0.31 billion, and $1.7 billion in the high cost scenario. In the all three cost scenarios, land is acquired on a least-cost first basis.

Table II.3-35
NPV of Mitigation Acquisition Cost Estimates Using Preferred Alternative Acreage ($ Millions)

County	Total Estimated Cost—All Land Types		
	Low	*Mid*	*High*
Imperial	$91.1	$222.7	$496.2
Inyo	$5.6	$12.9	$26.9
Kern	$32.4	$74.0	$157.6
Los Angeles	$20.3	$76.3	$151.5
Riverside	$44.8	$102.1	$217.8
San Bernardino	$80.6	$203.3	$470.1
San Diego	$30.3	$70.3	$181.2
Total	**$305.2**	**$761.5**	**$1,701.3**

Table II.3-36 shows the forecasted cost per acquired acre for purchasing and managing mitigation land at five-year snapshots. In other words, this is the amount that a project developer would need to fund to acquire an acre of private land for purposes of compensatory mitigation for Covered Species, based on mid-case assumptions.

Table II.3-36
Five-Year Snapshots for Per Acre Acquisition and Management Costs

Preferred Alternative - Mid-Cost Case, Least-Cost First					
County	*2017*	*2022*	*2027*	*2032*	*2037*
Imperial	$3,500	$4,000	$4,500	$5,100	$5,700
Inyo	$3,800	$4,300	$4,900	$5,500	$6,200
Kern	$3,700	$4,200	$4,700	$5,300	$6,000
Los Angeles	$3,700	$4,200	$4,700	$5,300	$6,000
Riverside	$3,700	$4,200	$4,700	$5,300	$6,000
San Bernardino	$3,900	$4,400	$5,000	$5,700	$6,400
San Diego	$3,700	$4,200	$4,700	$5,400	$6,100

Table II.3-37 shows the portion of costs associated with habitat mitigation through the acquisition and management of compensation land in the mid case with the Preferred Alternative using the least-cost first acquisition strategy. These cost categories are described in detail in Appendix I.

Table II.3-37
Open Space—NPV of Mitigation Acquisition Cost Estimates in Mid-Case Using Preferred Alternative Acreage and Lowest Cost First Compensation Acreage Selection Criteria ($ Millions)

County	Acquisition and Initial Site Work	Long-Term Management and Maintenance	National Fish and Wildlife Foundation Fees	Property Taxes	Total Estimated Cost	Total NPV Cost per Acre
Imperial	$117.6	$96.5	$4.4	$4.3	$222.7	$4,800
Inyo	$7.3	$5.1	$0.3	$0.3	$12.9	$5,300
Kern	$40.3	$30.4	$1.5	$1.8	$74.0	$5,100
Los Angeles	$57.0	$12.4	$1.6	$5.3	$76.3	$13,000
Riverside	$55.6	$42.0	$2.0	$2.5	$102.1	$5,100
San Bernardino	$115.0	$78.3	$4.1	$5.8	$203.3	$5,400
San Diego	$0.0	$0.0	$0.0	$0.0	$0.0	$0
Total	**$448.5**	**$272.0**	**$15.4**	**$25.7**	**$761.5**	**$5,900**

II.3.1.8.4.2 Cost Estimate for Non-Acquisition Compensation in the Preferred Alternative

The Draft Assumptions for the DRECP Cost Analysis provide acreage of acquisition and the acreage-equivalent activities for non-acquisition compensation for each ecoregion subarea. The draft distinguishes between compensation for impacts in non-agricultural lands and terrestrial operational impacts in wind project areas and compensation for impacts in agricultural lands. We summed the two to compute the total acreage and its equivalent of lands needed for both acquisition and non-acquisition forms of compensatory mitigation for each ecoregion subarea and then mapped the subareas to the DRECP counties to determine acquisition and non-acquisition compensation acreage values by county.

As described above, for purposes of this analysis, non-acquisition measures are assumed to provide a proportion of the total required compensatory mitigation for purposes of estimating NCCP and GCP implementation costs. Four non-acquisition measures were considered for this analysis: habitat enhancement; fencing and signage; roost habitat creation, enhancement, and protection; and predator, cowbird or starling control. The

estimated acreage-equivalents of lands needed for non-acquisition forms of compensatory mitigation represent "acquisition-calibrated" mitigation compensation and were developed using "acquisition-calibrated" mitigation ratios that represent the number of acres of conserved that are equivalent to a unit of each non-acquisition compensatory mitigation action. We converted the acquisition-calibrated non-acquisition compensatory mitigation acreages to equivalent non-acquisition mitigation units using the compensation ratio assumptions discussed in Appendix I.

We applied these cost estimates to the non-acquisition mitigation units to determine the non-acquisition mitigation costs for each county. Table II.3-38 shows the costs associated with non-acquisition mitigation. Total non-acquisition mitigation costs are over $0.91 billion in the mid-case.

Table II.3-38
NPV of Non-Acquisition Mitigation Cost Estimates ($ Millions)

County	Total Estimated Cost
Imperial	$210.2
Inyo	$22.8
Kern	$69.7
Los Angeles	$28.8
Riverside	$240.1
San Bernardino	$324.3
San Diego	$17.1
Total	**$913.0**

II.3.1.8.4.3 Cost Summary for the Preferred Alternative

Table II.3-39 shows the range of estimated costs by county for all acquisition and non-acquisition activities related to meeting the Biological Objectives. Forecasted costs range from $1.2 to $2.6 billion over the 25 year period from 2016 to 2040.

Table II.3-39
Range of Total Estimated NPV Cost for Biological Compensation in the Preferred Alternative ($ Millions)

County	Low	Mid	High
Imperial	$301.4	$433.0	$706.4
Inyo	$28.4	$35.7	$49.7
Kern	$102.1	$143.7	$227.3
Los Angeles	$49.1	$105.1	$180.3
Riverside	$284.8	$342.2	$457.9
San Bernardino	$404.9	$527.5	$794.4
San Diego	$47.5	$87.4	$198.3
Total	$1,218.2	$1,674.5	$2,614.3

Cost Summary per Acre Impacted

Table II.3-40 summarizes the NPV of the total estimated cost per acre of impact for Covered Activities, i.e., the acreage of project footprint. The estimated impact acreage is provided in Table H-8 in Appendix H. Appendix H also discusses the method used to convert impact acreage into estimated compensation acreage-equivalents. Based on this data, DRECP-wide average costs range from $5,600 to $12,000 per acre of impact. The higher costs in some counties are associated with greater reliance on non-acquisition compensation activities on public lands. Also, the county-specific costs are affected by the assignment of costs to projects across counties. Where ecoregions cross county borders, these assignments are based on a simple proportional formulation that may not accurately represent actual cost responsibilities.

Table II.3-40
Total Estimated NPV Cost per Acre Impacted

County	Low	Mid	High
Imperial	$4,240	$6,100	$9,950
Inyo	$5,690	$7,140	$9,930
Kern	$3,290	$4,630	$7,330
Los Angeles	$4,910	$10,500	$18,010
Riverside	$5,090	$6,110	$8,180
San Bernardino	$9,200	$11,990	$18,050
San Diego	$0	$0	$0
Total	$5,610	$7,720	$12,050

II.3.1.8.4.4 Cost Comparison of the Action Alternatives

Table II.3-41 summarizes the total costs for the preferred and other four action alternatives under consideration. Alternatives 1, 3 and 4 have a lower forecasted cost than the Preferred Alternative with mid-case assumptions. Alternative 1 is lowest at $1.35 billion; Alternative 2 is the most expensive at $3.05 billion. As described in Volume II, Chapters II.3 through II.7, each DRECP alternative has a specific combination of DFAs and DRECP Plan-Wide Reserve Design Envelope. As the size and location of the DFAs vary in each of the alternatives, so do the specific CMAs that are required to offset the development impacts within the DFAs. The implementation of the specific set of CMAs for impact compensation identified in each alternative determines the compensation cost. The table below shows how the estimated compensation costs vary by alternative and by county. For details about what CMAs could be implemented by alternative see Section II.3.1.2.5.

Table II.3-41
NPV of Mitigation Cost Estimates for the Action Alternatives Using Mid Case Lowest Cost First Compensation Acreage Selection Criteria ($ Millions)

Total Estimated Cost—All Land Types					
County	*Alternative 1*	*Alternative 2*	*Alternative 3*	*Alternative 4*	*Preferred*
Imperial	$444.0	$578.6	$444.6	$377.0	$433.0
Inyo	$65.7	$140.5	$49.9	$48.7	$35.7
Kern	$103.3	$343.8	$137.7	$139.5	$143.7
Los Angeles	$56.1	$325.9	$95.4	$101.1	$105.1
Riverside	$197.3	$440.0	$217.5	$414.5	$342.2
San Bernardino	$397.7	$1,130.3	$465.3	$479.0	$527.5
San Diego	$89.7	$95.0	$89.7	$83.5	$87.4
Total	**$1,353.8**	**$3,054.1**	**$1,500.0**	**$1,643.3**	**$1,674.5**

II.3.1.8.5 Funding Sources

This section summarizes current funding options, and analyzes alternative funding methods including fees, grants and subsidies.

This section identifies the potential sources that may be available to support the funding of the implementation actions identified in the previous sections. Consistent with the goals of the NCCPA and ESA, the NCCP and GCP have been designed to mitigate for the effects of the Covered Activities that are permitted under this Plan, contribute to the recovery of threatened and endangered species, help prevent species from becoming threatened or endangered, and improve ecosystem health. To achieve these important goals, the NCCP

will be funded by implementation fees determined by the level of incidental take anticipated to result from Covered Activities permitted under the NCCP and other sources of private and public funding. The GCP will be funded through implementation fees (referred to as mitigation fees in the GCP appendix [Appendix M]).

It is important to note that this chapter is not a financing plan for the state or federal agencies or any other party. Separate financing plans, funding agreements, legislative authority, and other documents will be needed to enable the use of certain funding sources. This chapter provides an overview of potential funding sources that are likely to be available to support the implementation of the DRECP.

II.3.1.8.5.1 DRECP Implementation Fees

An implementation fee will be required for all Covered Activities. Revenues from implementation fees will be used to fund implementation of CMAs that provide compensatory mitigation for the impacts of the Covered Activities and provide for the conservation and management of Covered Species. The Coordination Group will determine the appropriate implementation fee amount for each Covered Activity based on the cost of implementing the DRECP CMAs required for the Covered Activity, taking into consideration the estimated costs for implementation discussed above and in Appendix I, and any other relevant and reliable cost information available at the time the implementation fee is determined. A description of the amount of the implementation fee, and the calculation used to determine the fee, will be provided to the proponent of the Covered Activity before the Approval Agency takes final action on the application for the Covered Activity. Payment of the implementation fee will be a condition of approval for each Covered Activity.

For Covered Activities that receive a take authorization issued under the NCCP, or a FESA incidental take permit issued under the GCP, the amount of the implementation fee will be included in and covered by the regulatory assurances provided in connection with the take authorization or incidental take permit, such that the amount of the fee will not be increased once the take authorization or incidental take permit is issued.

Proponents of Covered Activities will be directly responsible for implementing all CMAs that must be implemented on the site of a Covered Activity, including but not limited to CMAs intended to avoid or minimize the impacts of Covered Activities. The cost of implementing on-site CMAs will therefore not be included in the DRECP implementation fee.

Where the proponent of the Covered Activity elects to participate in the voluntary informal review of Project Proposals described in Section II.3.1.5.3, the Coordination Group will provide a preliminary estimate of the amount of the DRECP implementation fee that would apply to the proposed Covered Activity.

Components of DRECP Implementation Fees

The DRECP implementation fee for each Covered Activity will reflect the actual cost of implementing all off-site CMAs required for the Covered Activity. Table II.3-40 provides a range of estimated per-acre compensatory mitigation costs for Covered Activities. However, it is important to note that the estimate in Table II.3-40, like other estimates in the cost and funding analysis, are based on currently available information and are based on a general, Plan-wide cost estimate. Actual costs for off-site CMAs for individual Covered Activities are likely to vary from project to project, depending on location and other factors. Therefore, the DRECP implementation fee for each individual Activity, including the per acre cost reflected in the fee, is also likely to vary.

The DRECP implementation fee calculated for each Covered Activity will include the cost of the following, as applicable:

- Land acquisition (fee title or conservation easement), including
  - Level 1 environmental site assessment
  - Appraisal
  - Initial site work and clean-up
  - Fencing and signage
  - Transaction, overhead, closing and escrow costs
  - Boundary survey and monumentation
  - Biological survey for determining mitigation value of land
  - Third-party administrative costs
  - Coordination Group costs to review and determine suitability of land for mitigation purposes
- Endowment for long-term land management and maintenance
- Habitat restoration and enhancement, including
  - Exclusion of unauthorized activities (e.g., OHV vehicles or grazing)
  - Invasive species removal
  - Reseeding/replanting native vegetation
  - Reintroducing native wildlife
  - Restoring natural contours
  - Restoring lost or degraded hydrologic or geomorphic functions

  - Removing obstructions to the wind sand transport corridor
  - Increasing groundwater availability for dependent species
  - Roost habitat creation, enhancement, and protection,
  - Predator, cowbird, or starling control
  - Raven control and management
- Monitoring and adaptive management costs, including
  - Landscape and ecological processes effectiveness monitoring
  - Natural community effectiveness monitoring
  - Covered Species effectiveness monitoring
  - Desert tortoise range-wide population monitoring
  - Mohave ground squirrel data gap baseline studies
  - Bird and bat Covered Species Plan-wide monitoring of operation effects
  - Agriculture-dependent Covered Species monitoring
  - Golden eagle population monitoring
- Administrative costs, including
  - DRECP Agency staff and related costs
  - Office space and utilities
  - General office equipment
  - Staff-assigned office equipment
  - GIS hardware and software
  - Public outreach
  - Environmental review if necessary
  - Vehicle and related costs
  - Legal, accounting, and insurance costs

II.3.1.8.5.2 State and Federal Funding

Federal Funding Sources

U.S. Fish and Wildlife Service Administered Programs and Funds

USFWS has two funding sources relevant to the DRECP, the Cooperative Endangered Species Conservation Fund (Section 6 of the ESA), and the Land and Water Conservation

Fund. However, the DRECP will be competing with existing regional HCPs at the state level, and with local counties and other municipalities for these funds.

Cooperative Endangered Species Conservation Fund – HCP Land Acquisition Grants

The USFWS Cooperative Endangered Species Conservation Fund HCP Land Acquisition Grants authorized under Section 6 of the ESA are likely to provide a source of grant funding for land acquisition to complement mitigation lands that are acquired under the NCCP and GCP to contribute to recovery of Covered Species. The fund provides funding to states for land acquisition from willing sellers. States must contribute a minimum nonfederal match of 25% for the estimated program costs of approved projects.

Section 6 grants cannot be used for mitigation, but they may be used to acquire conservation lands that complement HCP (and GCP) mitigation lands. USFWS has provided significant funds to the State of California in the past to complement regional HCPs. In California, grants are applied for and administered by CDFW.[9]

The Land and Water Conservation Fund

The Land and Water Conservation Fund was established by Congress in 1965 to receive a portion of receipts from offshore oil and gas leases. These receipts are placed into a fund annually for state and local conservation, as well as for the protection of national treasures (parks, forest, and wildlife areas). The fund has been the principal funding source for federal land acquisitions for conservation and recreation purposes since 1965. BLM, USFWS, the National Park Service, and the U.S. Forest Service all receive funds from the Land and Water Conservation Fund. The fund also serves as a major source of state and local funding for land acquisition and development of public outdoor recreation resources through a state matching grant program. Funding for the program has remained flat since at least 2002. In fiscal year 2011, the fund was allocated $301 million for land acquisition nationwide. Allocations nationwide in past years have been as low as $138 million (fiscal year 2007) and as high as $536 million (fiscal year 2001).

The State Wildlife Grant Program is funded annually with an appropriation from Congress through the Land and Water Conservation Fund. The goal of the grant program is to conserve wildlife and their habitats. Grants are available to states and territories and are intended for developing and implementing programs that benefit fish and wildlife species at risk and their habitats. The grant program provides states with funds to address the conservation needs of nongame species, including reptiles, amphibians, and invertebrates. Priority is placed on projects that benefit species of greatest conservation concern. Grant

[9] See USFWS: http://www.fws.gov/midwest/endangered/grants/S6_grants.html and http://www.fws.gov/endangered/grants/grant-programs.html.

funds must be used to address conservation needs, such as research, surveys, species and habitat management, and monitoring, identified within a state's comprehensive wildlife conservation plan or strategy.

The State Wildlife Grant Program of the Land and Water Conservation Fund may fund land acquisition. Over the history of the fund, Western states have received the majority of the funding because federal land is much more common in the West. California has received an average of approximately $50 million annually over the 45-year life of the fund, although less in recent years due to declining funding allocations. The DRECP is expected to be competitive for this funding.

Federal Loan Guarantees for Multiple Species Habitat Conservation Plans

Representative Ken Calvert and Senator Dianne Feinstein have introduced the Infrastructure Facilitation and Habitat Conservation Act in Congress.[10] "The Infrastructure Facilitation and Habitat Conservation Act establishes a program to provide loans and loan guarantees to enable eligible public entities to acquire assets associated with habitat conservation plans (HCPs) approved by the Secretary of the Interior." This would create federal loan guarantees for agencies that buy land for habitat conservation as long as the plans support transportation and infrastructure efforts. The proposed program would operate in the U.S. Treasury, with input from the U.S. Departments of Interior and Commerce. The Secretary of the Treasury is tasked with soliciting loan applications for HCPs once every calendar year.

The bill does not specify a dollar amount to be appropriated for this loan program, which has a 10-year sunset clause. If signed into law, this loan guarantee program could provide the DRECP with loans early in the permit term that would facilitate land acquisition from willing sellers for the reserve system and when necessary to enable restoration efforts until funding sources were available later in the permit term. Loan guarantees do not provide new funding but rather only lower the interest rate on those loans, so the funding plan herein does not assume the loan guarantee program is a potential funding source.

State Funding Sources

State Tax Credit for Donation of Conservation Lands

The Natural Heritage Preservation Tax Credit Act of 2000 (Public Resources Code 37000 et seq.) protects wildlife habitat, parks and open space, archaeological resources, and agricultural land and water by providing state tax credits for donations of qualified land in fee title or conservation easement. The program has been extended twice. The current

[10] See https://beta.congress.gov/bill/113th-congress/house-bill/2280.

authorization extends until June 30, 2015. To date, $48 million in tax credits have been approved under the program.

The DRECP could benefit from this program, if extended further, by cost-sharing land acquisition with the federal government. Future bonds would provide funding for the state portion of the tax credit. Eligible donors would also be able to deduct the full value of land as a tax deduction from the federal government, for up to 60% of the value of the land. Using this method, the DRECP could save up to 60% on the cost of land acquisition for protection or restoration purposes.

California Greenhouse Gas Reduction Fund

Assembly Bill 32, the Global Warming Solutions Act of 2006, directed the California Air Resources Board (CARB) to address climate change using multiyear programs to reduce greenhouse gas (GHG) emissions in California.[11] CARB has adopted a Scoping Plan that describes the approach California will take to reduce GHG emissions and achieve the goal of reducing emissions to 1990 levels by 2020. In Appendix C of the first update to the Scoping Plan, the DRECP is highlighted by CARB as a planning strategy to increase renewable energy production and reduce GHG emissions from the energy sector.

The Cap-and-Trade Program, a key element of the Scoping Plan, began in 2012. A portion of the GHG emissions permits (allowances) established by the Cap-and-Trade Program are sold at quarterly auctions and reserve sales. The Legislature and Governor appropriate proceeds from the sale of State-owned allowances for projects that support the goals of AB 32. Strategic investment of these proceeds furthers the goals of AB 32 by reducing GHG emissions, providing net GHG sequestration, and supporting the long-term, transformative efforts needed to improve public and environmental health and develop a clean energy economy.[12]

The auctioned allowances could generate $12 to $45 billion through 2020.[13] The enacted State Budget for FY 2014-15 appropriates $832 million in auction proceeds to 11 state agencies to begin funding programs that will reduce GHG emissions, provide direct investments and benefits in disadvantaged communities, and provide additional environmental and economic co-benefits.[14] Of that amount, $630 million is for sustainable communities and clean transportation programs, including high-speed rail, $110 million for energy efficiency and clean energy programs, and $92 million for natural resources and

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11 See http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/auctionproceeds.htm.
12 See http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/final_investment_plan.pdf.
13 See Legislative Analyst's Office, *The 2014-15 Budget: Cap-and-Trade Auction Revenue Expenditure Plan* , February 24, 2014, http://www.lao.ca.gov/reports/2014/budget/cap-and-trade/auction-revenue-expenditure-022414.aspx.
14 See http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/budgetappropriations.htm; and http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/2014-15budgetcapandtradeauctionproceeds.pdf

waste diversion programs. CDFW received $30 million to restore wetlands. The Legislature and the Governor also enacted Senate Bill 862, which provides for continuous appropriations of future year's GGRF monies for transportation, transit, land-use, housing, and agricultural land preservation programs.

The DRECP appears to be eligible for funding from the California Greenhouse Gas Reduction Fund because once implemented the Plan will facilitate development of low and zero GHG emitting renewable resources. Funds might be used to lower the costs of developing renewables in highly productive locations, to mitigate the impacts of such development on local disadvantaged communities, and provide additional environmental and economic benefits by conserving natural resources. Funding the DRECP from this source would depend on allocations, relative cost-effectiveness and nexus with GHG reductions compared to other available activities such as the High Speed Rail Project in the State Budget.

II.3.1.8.5.3 Other Funding Sources

Interest Income

The DRECP is expected to gain limited income from interest on revenue not yet spent. Future interest rates are uncertain. The average apportionment yield rates earned on the State of California Investment Pooled Money Investment Account-Surplus Investment Fund balances averaged 2.2% over the 10-year period of 2002 through 2011. During this 10-year period, the highest quarterly rate was 5.2% in 2007 and the lowest was 0.4% in 2011 (California State Controller's Office 2014).

Endowment

An endowment is a method used to generate annual management funding over long time horizons. The endowment is a sum of money held in an interest-bearing account in an amount sufficient to generate enough yearly income to fund annual management, maintenance, monitoring, and other activities on mitigation lands. Endowments will be managed to fund mitigation activities for specific Covered Activities at the outset of those Activities. Grants from federal agencies typically do not fund endowments.

Senate Bill 1094, which was enacted in September 2012 and which amended Government Code Section 65965 and added Sections 65965–65968, sets forth types of public and private entities that can hold endowment funds, which are defined as those funds "conveyed solely for the long-term stewardship of a mitigation property" (California Government Code, Section 65965[a]). Entities that can generally hold endowments include specified types of governmental entities, special districts, non-profit organizations, community foundations, and congressionally chartered organizations. Whether a qualified entity can hold a particular endowment depends on a series of factors relating to its

relationship to the mitigation property (California Government Code, Section 65968). Pursuant to SB 1094, endowments are "charitable trusts that are permanently restricted to paying the costs of long-term management and stewardship of the mitigation property for which the funds were set aside" (California Government Code, Section 65965[a]). While nothing in SB 1094 requires an endowment for a mitigation property, this statutory scheme governs the holding, investment, and expenditure of endowments required by state or local agencies as a condition of approving a project permit or approval.

At the end of the permit term, certain management and administrative costs relating to the mitigation property will continue in perpetuity. These costs will be paid from the endowment during the permit term. Interest from the fund will be used for ongoing management and administrative costs following the end of the permit. The annual rate of return on the endowment funds affects the availability of annual funds: the lower the rate earned on endowment funds, the higher the initial principal endowment costs. Costs to be paid from the endowment include ongoing costs for preserve management, administration, and land use monitoring.

II.3.2 BLM LUPA Elements of the Preferred Alternative

The BLM LUPA elements of the DRECP as described above include DFAs, SAAs, FAAs, portions of the reserve design—National Conservation Lands (also referred to as NLCS designations), Wild and Scenic Rivers, National Scenic and Historic Trails, ACECs, and Wildlife Allocations (depicted in Figure II.3-4 and summarized in Table II.3-42). In addition to the interagency components, the LUPA also contains Special Recreation Management Areas (SRMAs) and CMAs for the following resources:

- Air Resources
- Comprehensive Trails and Travel Management
- Cultural Resources and Tribal Interest
- Lands and Reality
- Livestock Grazing
- Minerals
- Paleontology
- Recreation and Visitor Services
- Soil, Water, and Water-Dependent Resources
- Special Vegetation Features
- Vegetation
- Visual Resources Management

- Wild Horses and Burros
- Wilderness Characteristics

BLM Special-Status Species are addressed in Section II.3.1.2.5.

The BLM LUPA also includes land use allocations to replace the multiple-use classes (MUCs), and establishes Visual Resource Management (VRM) classes.

The BLM LUPA elements outside of the DRECP, but within the California Desert Conservation Area (CDCA), consist of land use allocations to replace the MUCs, establishment of VRM Classes, and modification of existing NLCS designations. The DRECP BLM LUPA does not otherwise amend any BLM Land Use Plan for areas outside the DRECP boundary.

Land use plan decisions for public lands fall into two categories: desired outcomes (goals and objectives) and allowable (including restricted or prohibited) uses and actions anticipated to achieve desired outcomes (BLM Land Use Planning Handbook, H-1601-1). In the DRECP, CMAs represent those management actions and allowable uses.

Approximately 9,834,000 acres within the Planning Area occur within the BLM LUPA on BLM-administered lands. Under the Preferred Alternative, approximately 367,000 acres of DFAs occur on BLM-administered lands.

In this area, existing conservation areas on BLM lands totals 3,264,000 acres, including 3,260,000 acres of LLPAs. All of the BLM LLPAs are Wilderness Areas or Wilderness Study Areas and management to meet the statute of the Wilderness Act of 1964 and to ensure these congressionally designated areas meet DRECP conservation goals.

As shown in Table II.3-43, of the 4,900,000 acres of BLM LUPA conservation designations on BLM-administered lands, 1,362,000 acres (28%) would be designated as Existing or Proposed ACEC, 3,229,000 acres (66%) would be Existing or Proposed ACEC and National Conservation Lands, 291,000 acres (6%) would be National Conservation Lands only, and 18,000 acres (less than 1%) would be Wildlife Allocation. Land use allocations and limitations are described in Section II.3.2.2.

Table II.3-42
Interagency Preferred Alternative within the BLM LUPA

Alternative Components	Acreage[1]
DFAs	**367,000**
Study Area Lands	**106,000**
Future Assessment Areas	58,000
Special Analysis Areas	35,000
DRECP Variance Lands	13,000

Table II.3-42
Interagency Preferred Alternative within the BLM LUPA

Alternative Components	Acreage[1]
DRECP Plan-Wide Reserve Design Envelope	**8,164,000**
Existing conservation areas[2]	3,264,000
BLM LUPA conservation designations[3]	4,900,000
Urban Areas, Other Lands, and Undesignated Areas	**1,198,000**
Impervious and Urban Built-up Land	72,000
BLM Open OHV Areas	235,000
Imperial Sand Dunes, including the BLM Open OHV Area	127,000
Johnson Valley OHV Shared Use Area	54,000
Undesignated Areas	709,000
Total	**9,834,000**

Notes: BLM LUPA conservation designations include NLCS lands, ACECs, and Wildlife Allocations. Overlaps of BLM LUPA conservation designations with existing conservation areas are reported in the existing conservation area acreages. The BLM LUPA would also designate approximately 2,531,000 acres of SRMAs on BLM-administered lands in addition to the 193,000 acres of existing SRMAs on BLM-administered lands, which are BLM designation overlays that overlap portions of the components provided in this table. Impervious and urban built-up lands occur within BLM LUPA conservation designations and DFAs where not explicitly included in the urban category reported here. The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

1 Acreages reported are on BLM-administered lands only within the BLM LUPA area.

2 BLM existing conservation areas include areas considered LLPA-designated Wilderness, Wilderness Study Areas, and National Historic Trails. See the Glossary of Terms for more detail.

3 BLM LUPA conservation designations include proposed NLCS, and existing, proposed and ACEC and Wildlife allocations. See the table below and Glossary of Terms for more detail.

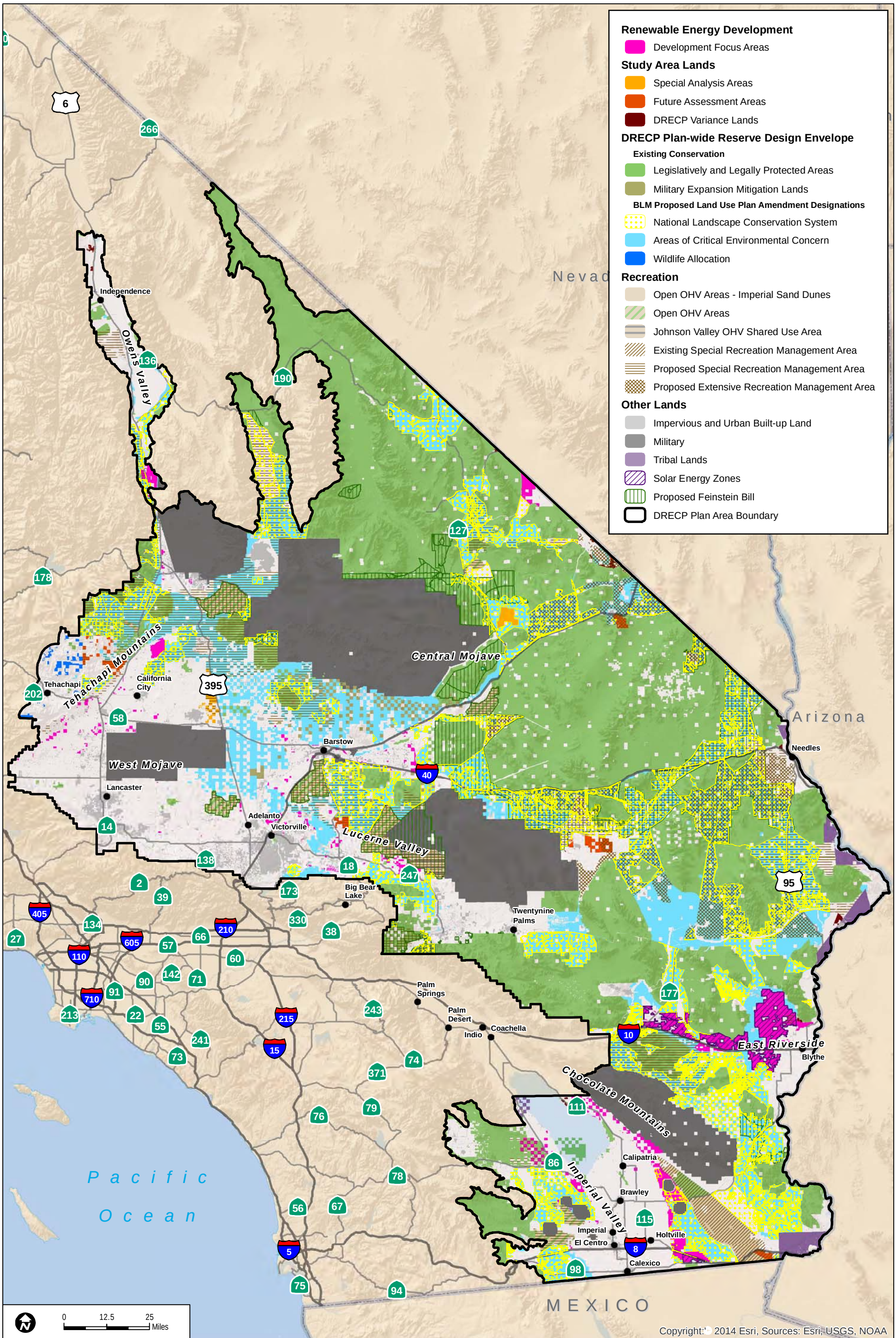
Table II.3-43
Preferred Alternative BLM LUPA Conservation Designations within the BLM LUPA

BLM LUPA Conservation Designation	Acreage[1,2]
NLCS	291,000
NLCS (and Existing ACEC)	1,648,000
NLCS (and Proposed ACEC)	1,581,000
Existing ACEC	369,000
Proposed ACEC	993,000
Wildlife Allocation	18,000
Total	**4,900,000**

Notes: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

1 Acreages reported are on BLM-administered lands only within the BLM LUPA area.

2 Approximately 849,000 acres of BLM LUPA conservation designations on BLM-administered lands occur within existing conservation areas and 14,000 acres occur within Other Lands. These overlapping acres are not reported in this table.



Sources: ESRI (2014); CEC (2013); BLM (2013); CDFW (2013); USFWS (2013)

*The portion of the reserve design outside Existing Conservation Areas and BLM LUPA Conservation Designations on private and non-BLM public lands from which reserve areas will be assembled from willing sellers as compensation for Covered Activities.

FIGURE II.3-4

Preferred Alternative - BLM LUPA

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In addition to the proposed BLM LUPA conservation designations, the Preferred Alternative includes proposed BLM LUPA SRMAs and Extensive Recreation Management Areas (ERMAs), as shown in Table II.3-44. Land use allocations and limitations are described in Section II.3.2.2.

Table II.3-44
Preferred Alternative Special Recreation Management Areas and Extensive Recreation Management Areas Within the BLM LUPA

SRMA/ERMA	Acreage[1]
Existing SRMA	193,000
Proposed SRMA	2,531,000
Proposed ERMA	879,000
Total	**3,603,000**

Notes: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

[1] Acreages reported are on BLM-administered lands only within the BLM LUPA area.

The proposed BLM LUPA would not modify existing energy corridors, including "corridors of concern" defined in the Section 368 Energy Corridors settlement agreement described in Section I.2.1.7.7.

II.3.2.1 BLM Renewable Energy Policies

II.3.2.1.1 Development Incentives in DFAs

Through the DRECP, the BLM is proposing a variety of incentives to steer future utility-scale renewable energy development to the DFAs. As noted in the table below, some of the incentives would require changes in BLM regulations and policies. These incentives would only apply if those changes are adopted. These incentives include those described in the BLM's Solar PEIS ROD for utility-scale solar development in the Solar Energy Zones (SEZs). Under the DRECP, these incentives would also apply to solar, wind, and geothermal development in DFAs, as well as additional incentives. Unless mentioned below, the BLM will apply its current regulations and policies when processing ROW applications in DFAs (e.g. compliance with the National Historic Preservation Act will be conducted in accordance with 36 CFR Part 800 and IM 2013-20, or its successor).

The proposed incentives and their applicability to the different energy technologies are contained in Table II.3-45.

Table II.3-45
DRECP Incentives for Renewable Energy Development within Development Focus Areas on BLM-Administered Land

Development Focus Area Incentive	Solar	Wind	Geothermal
Facilitate Streamlined Permitting[15]			
The BLM will commit to adhere internally to strict schedules (consistent with applicable laws)	Yes	Yes	Yes
The DOI will undertake interagency coordination to expedite service and provide priority processing to projects in DFAs	Yes	Yes	Yes
The BLM will maintain RECOs as long as needed to assist with efficient authorization of projects in DFAs	Yes	Yes	Yes
The BLM may establish a competitive process for DFAs consistent with existing regulations or through new rulemaking[16]	Yes	Yes, with measures to protect initial investment of testing	No; already established in federal regulations at 43 CFR subpart 3203
Prioritize development in DFAs, particularly in areas with high energy generation potential and low resource conflicts.	Yes	Yes	Yes
The BLM will prioritize development in DFAs. This includes having a single point of contact per project and adopting internal procedures to ensure accountability to schedules and quality.	Yes	Yes	Yes
The BLM will tier project-level NEPA analysis to the DRECP EIS for renewable energy projects in DFAs.	Yes	Yes	Yes

15 These actions would be implemented through BLM Policy or Regulation and are not part of the Land Use Plan Amendment.

16 The BLM may establish a competitive process for DFAs where appropriate under existing regulations at 43 CFR 2804.23. New regulations are also being prepared, as an implementation action from the Solar PEIS, to facilitate a competitive leasing process for both solar and wind energy development in designated leasing areas (which could include DFAs). In DFAs in which BLM-administered lands are scattered or comprise only a small portion of the total acreage, the BLM would not establish a competitive process. However, the BLM may take other actions to incentivize renewable energy in these DFAs, such as reduction of rental payments under the authority of 43 CFR 2806.15.

Table II.3-45
DRECP Incentives for Renewable Energy Development within Development Focus Areas on BLM-Administered Land

Development Focus Area Incentive	Solar	Wind	Geothermal
The BLM will coordinate with DOD on potential applications for solar power towers and wind in DFAs identified by DOD as high or moderate risk to testing and training before accepting applications.	Yes	Yes	NA
The BLM will integrate planned transmission corridor improvements developed by the Transmission Technical Group.	Yes	Yes	Yes
Improve and Facilitate Mitigation			
The BLM will develop DFA mitigation strategies to simplify the mitigation process and provide financial certainty.	Yes	Yes	Yes
The BLM will develop and utilize appropriate tools to efficiently implement mitigation (Tools may include applicant and third-party implementation, and mitigation deposit accounts, such as the REAT-NFWF Mitigation Account.	Yes	Yes	Yes
The BLM will utilize the USFWS Region 8 golden eagle framework guidance, or most up to date document, as a means to facilitate the potential for streamlining future Bald and Golden Eagle Protection Act permitting in the DFAs.	Yes	Yes	Yes
The BLM will utilize the analysis in the DRECP's ESA Section 7 consultation documents, and any other applicable DRECP documents, when considering project-level authorizations in DFAs.	Yes	Yes	Yes
Facilitate Permitting of Needed Transmission			
The BLM will commit staff and prioritize projects that provide needed transmission to the DFAs.[17]	Yes	Yes	Yes

[17] These actions would be implemented through BLM Policy or Regulation and are not part of the Land Use Plan Amendment.

Table II.3-45
DRECP Incentives for Renewable Energy Development within Development Focus Areas on BLM-Administered Land

Development Focus Area Incentive	Solar	Wind	Geothermal
The BLM will prioritize transmission associated with DFAs, and will tier transmission NEPA to DRECP documents to the greatest extent practicable[18]	Yes	Yes	Yes
Provide Economic Incentives			
Projects will require lower cost recovery in DFAs because of upfront data collection and environmental review.[19]	Yes	Yes	NA—Cost recovery does not apply to geothermal leasing.
Projects will have a longer phase-in period for rental payments in DFAs.[20]	Yes	Yes, as permitted by BLM regulation and policy.	No—Geothermal Lease rental requirements are addressed in 43 CFR Subpart 3211.
The BLM will charge fixed megawatt capacity fee rental payment for the life of the project in DFAs.[21]	Yes	Yes, as permitted by BLM regulation and policy.	No—Lease Royalty rates for leases issued after August 8, 2005 were established in the 2005 Energy Policy Act, and are incorporated into federal regulations at 43 CFR 3211.17.
The BLM will charge limited base acreage rental payments in DFAs.[22]	Yes	Yes, as permitted by BLM regulation and policy.	No—Geothermal Lease rental requirements are addressed in 43 CFR Subpart 3211.

18 These actions would be implemented through BLM Policy or Regulation and are not part of the Land Use Plan Amendment.
19 These actions would be implemented through BLM Policy or Regulation and are not part of the Land Use Plan Amendment.
20 These actions would be implemented through BLM Policy or Regulation and are not part of the Land Use Plan Amendment.
21 These actions would be implemented through BLM Policy or Regulation and are not part of the Land Use Plan Amendment.
22 These actions would be implemented through BLM Policy or Regulation and are not part of the Land Use Plan Amendment.

Table II.3-45
DRECP Incentives for Renewable Energy Development within Development Focus Areas on BLM-Administered Land

Development Focus Area Incentive	Solar	Wind	Geothermal
The BLM will restructure bonding requirements in DFAs (e.g., a fixed or standard bond per acre).[23]	Yes	Yes, as permitted by BLM regulation and policy.	No—general geothermal bond requirements are addressed in 43 CFR Subpart 3214. Additional bond requirements specific to exploration activities are addressed in subpart 3251.15; drilling operations, Section 3261.18; and utilization operations, Section 3271.12 and Section 3273.19.
The BLM will offer 30-year fixed term lease with fixed rental fee in DFAs.[24]	Yes	Yes, as permitted by BLM regulation and policy.	No—geothermal lease terms are addressed in 43 CFR subpart 3207
Development in DFAs should result in less administrative oversight and less need for administrative costs and processing time.[25]	Yes	Yes	Yes—within requirements in 43 CFR 3211.
Withdrawal of Lands			
Public lands in DFAs would be proposed for withdrawal, in accordance with regulation, subject to valid existing rights, from settlement, location, or entry under the general land laws, as follows:	Yes	Yes	Yes

[23] These actions would be implemented through BLM Policy or Regulation and are not part of the Land Use Plan Amendment.
[24] These actions would be implemented through BLM Policy or Regulation and are not part of the Land Use Plan Amendment.
[25] These actions would be implemented through BLM Policy or Regulation and are not part of the Land Use Plan Amendment.

Table II.3-45
DRECP Incentives for Renewable Energy Development within Development Focus Areas on BLM-Administered Land

Development Focus Area Incentive	Solar	Wind	Geothermal
• New mining claims could not be filed, however valid mining claims take precedence over future renewable energy development • Lands in DFAs would only be sold or exchanged if BLM determines the disposal would either facilitate renewable energy development or would not preclude such development. • Withdrawn lands would remain open to mineral leasing, geothermal leasing, and mineral material laws Lands would remain open to ROW authorizations and land leases or permits.			
Incentive for Multiple Technology			
DFAs where solar, wind, and/or geothermal can operate in the same area at the same time will be identified to facilitate the most efficient use of resources and space.	Yes	Yes	Yes
The mitigation/compensation requirements can be proportionally split between the two or three types of renewable energy projects sited on the same piece of ground and will not be additive.	Yes	Yes	Yes
To the extent practicable, surveys and assessments for wildlife or plant species and cultural resources will be combined or consolidated to address a dual or triple technology site.	Yes	Yes	Yes
Dual or triple technology projects can use a single NEPA document to analyze the project.	Yes	Yes	Yes

II.3.2.1.2 DRECP Variance Land Procedures

The BLM's Solar PEIS ROD defines a variance area as "an area that may be available for utility-scale solar energy ROW with special stipulations or considerations." The BLM identified all lands outside of exclusion areas and SEZs as variance areas for utility-scale solar energy development.

The Solar PEIS ROD allows applications in variance areas to be processed on a case-by-case basis, but applicants have the responsibility to demonstrate that proposed projects will avoid, minimize, and/or mitigate, as necessary, sensitive resources, and will be compatible with state and local plans (Final PEIS, Section 2.2.2.3).

Areas in the DRECP identified as DRECP Variance Lands are a subset of the variance lands identified in the Solar PEIS ROD. The BLM applied the same screening criteria as the Solar PEIS using new, updated and finer scale data. Additional screening criteria specific to the resources in the Land Use Plans were also applied to exclude additional lands to further reduce potential resource conflicts and incorporate new information into decision making. This process reduced the number of acres of variance lands compared to those designated in the Solar PEIS ROD. A list of the Solar PEIS screening criteria that had new, updated or finer scale data employed and the additional Land Use Plan specific screening criteria appears in Table II.3-46.

Additionally, some lands that are not currently in variance areas would be designated as DRECP Variance Lands. All DRECP Variance Lands would allow applications for solar, wind or geothermal technologies under similar analysis and management guidelines.

Table II.3-46
Solar PEIS ROD Variance Land Screening Criteria with New, Updated, or Finer Scale Data and Land Use Plan Specific Screening Criteria Used to Identify DRECP Variance Lands

- DFAs – applications in DFAs will not be subject to the variance process.
- Interagency biological reserve envelope
- Lands included in new and expanded ACECs and National Conservation Lands.
- All designated and proposed critical habitat areas for species protected under the ESA of 1973 (as amended).
- All areas with BLM inventoried wilderness characteristics.
- Developed recreational facilities, special-use permit recreation sites, all designated OHV-open areas, all SRMAs, and all Long-Term Visitor Areas identified in the Preferred Alternative, unless the SRMA is within a Future or Special Assessment Area, as described in Section II.3.2.
- All areas where the BLM has made a commitment to state agency partners and other entities to manage sensitive species habitat.
- All Desert Tortoise translocation sites identified in applicable land use plans, project-level mitigation plans or ESA Section 7 Biological Opinions.

Table II.3-46
Solar PEIS ROD Variance Land Screening Criteria with New, Updated, or Finer Scale Data and Land Use Plan Specific Screening Criteria Used to Identify DRECP Variance Lands

- All wildlife migratory and movement corridors identified in applicable land use plans.
- All Big Game Winter Ranges identified in applicable land use plans, such as mule deer area in the Bishop RMP.
- Lands Classified as Visual Resource Management (VRM) Class I or II in the applicable action alternatives.
- National Historic and Natural Landmarks identified in applicable land use plans and identified in the applicable Action alternatives.
- Lands within the boundaries of properties listed in the National Register of Historic Places.
- Designated Wild and Scenic River segments, and river segments determined to be eligible or suitable for Wild and Scenic River status identified in applicable land use plans, including any associated protective corridors identified in the Wild and Scenic River designation or proposal.
- Lands within a solar, wind or geothermal energy development application area found to be inappropriate for energy development through an environmental review process and ROD/CDCA Plan Amendment.
- All lands within the proposed Mojave Trails National Monument (S.138 California Desert Protection Act of 2011) and all conservation lands acquired outside of the proposed Monument through donations or use of Land and Water Conservation Funds.
- Variance land parcels smaller than 280 acres and/or not capable of being combined with other BLM variance parcels or non-BLM lands in DFAs to reach the 280-acre minimum size.[26]
- Narrow stringers on spur roads between existing or proposed areas conserved or specially managed.
- The area around ancient pluvial lake basins that contain Late-Pleistocene and Holocene shorelines, the exclusion areas to be determined based on the hydrologic history of the particular pluvial lake and to include a 500-meter buffer extending out from the highest strandline dating to the time of human occupation.
- Known archaeological sites.
- Areas within the viewshed of National Historic Sites.
- Areas within five miles of the centerline of National Scenic and Historic Trail Corridors.
- All microphyll woodlands.
- Lands within 0.25 miles of any surface water source or riparian areas (seeps, springs, lakes, ponds, streams, perennial rivers, and streams).
- Wild Horse or Burro Herd Management Areas.

DRECP Variance Lands would be available for solar, wind, and/or geothermal development. However, all applications in DRECP Variance Lands will follow the variance process described in Section B.5 of Appendix B of the Solar PEIS ROD. The process includes public outreach and interagency coordination prior to the NEPA process. After completing the

[26] 280 acres is the size of two utility-scale solar projects (20 MW as per CEC) at approximately 7 acres per MW.

steps outlined in Section B.5 of the Solar PEIS ROD, the BLM will make a determination on whether to reject or accept the application. If the BLM rejects an application, that decision must be made with regard for the public interest and be supported by reasoned analysis and an adequate administrative record. Denial of an application constitutes "final agency action" and is therefore subject to administrative appeals to the IBLA.

If the BLM accepts the application and agrees to begin the NEPA process, it is a commitment to begin the NEPA process. The BLM retains its authority to approve, deny, or approve with modifications, the application.

II.3.2.1.3 Future Assessment Areas and Special Analysis Areas on BLM Land

The LUPA would apply the same criteria and processes to FAAs on BLM land as were applied to DRECP Variance Lands in Section II.3.2.1.2. In addition, the following criteria would have to be met before the BLM would accept an application on these lands:

- Consistency with the land designation in which the FAA resides, for example a SRMA.
- Compatibility with other high value resources such as minerals.

II.3.2.1.4 Existing Applications on BLM-Administered Land

The BLM's Land Use Planning Handbook describes how the BLM, during a land use plan amendment process, "should review all proposed implementation actions through the NEPA process to determine whether approval of a proposed action would harm resource values so as to limit the choice of reasonable alternative actions relative to the land use plan decisions being reexamined. Even though the current land use plan may allow an action, the BLM has the discretion to defer or modify proposed implementation actions, such as decisions on individual projects, to reduce the effect of these actions on the resource values being considered in the land use plan amendment process. The appropriate modification to the proposed action is subject to valid existing rights and program-specific regulations" (BLM Land Use Planning Handbook H-1601-1, Section VII.E).

Proposed Solar and Wind Projects on BLM land authorized prior to issuance of the DRECP ROD: Some solar and/or wind applications[27] are, or will be, undergoing environmental analysis (NEPA) and decision-making processes between the publication of this DEIS/DEIR and issuance of the DRECP ROD. The DRECP ROD will not affect solar and wind projects that are authorized prior to completion of the DRECP. Authorized projects are those for which the BLM has offered and the applicant has accepted a ROW grant.

[27] The above process does not apply to geothermal projects. Geothermal projects are managed according to regulation 43 CFR 3200.

Projects proposed on BLM lands that are not authorized prior to issuance of the DRECP ROD: Some solar or wind applications are already being evaluated through ongoing, project-specific analysis and decision processes that will not be completed before a DRECP ROD is signed. The land use allocation decisions made in the DRECP ROD (e.g. decisions to establish an ACEC designation or a DFA) will not affect project applications if they meet either of the following criteria:

1. A project that is proposed in a BLM SEZ and that is considered a "pending project" under the Solar PEIS ROD (the project application was filed before June 30, 2009).
2. A project with a published Draft EIS or EA no later than 60 days after release of this DEIS for the DRECP provided the final project-level NEPA document includes:
    a. Analysis using the best available information at the time of publication, including data developed in support of DRECP conservation and recreation strategies, and
    b. Analysis describing the relationship between the project and the DRECP conservation and recreation strategies.

Amendments to project applications or authorized projects that meet either of the criteria listed above will not be subject to the land use decisions of the DRECP, provided that the amendment either (1) does not change the boundaries of the proposed project ROW, or (2) is related to avoiding resource or land conflicts, adapting the project to third-party-owned infrastructure constraints, or using or designating translocation or mitigation lands.

In processing proposed projects, the REAT agencies will continue to apply the NCCP interim process using best available information to assess any conflicts with preliminary conservation goals and objectives as identified in the DRECP Planning Agreement.

Table II.3-47
BLM Solar and Wind Applications with Possible Draft EIS Within 60 Days of DRECP Draft EIS as of July 28, 2014

Application	Serial Number	Solar/ Wind	Current Status	In SEZ?	DEIS by Late Summer 2014?
BrightSource Palen	CACA 48810	Solar	FEIS published 5/13/11; Supplemental DEIS published 7/26/13	Yes	Yes
Bechtel Soda Mountain	CACA 49584	Solar	DEIS published 11/29/13	No	Yes
Iberdrola Tylerhorse	CACA 51561	Wind	DEIS published 4/18/14	No	Possible

The applications listed above either have a published DEIS or could have one within 60 days of the DRECP's Draft EIS publication. This list does not constitute a guarantee that the projects above will reach the Draft EIS milestone by the deadline, nor does it preclude applications not on this list from publishing a Draft EIS by the deadline.

Table II.3-48
Additional California BLM First-in-Line Solar Applications within a Solar Energy Zone

Application	Serial Number	Solar/Wind	Current Status
First Solar Desert Quartzite	CACA 49397	Solar	Pre-NOI
Solar Reserve Imperial	CDCA 49884	Solar	Pre-NOI
Solar Reserve Mule Mountain	CACA 50390	Solar	Pre-NOI
EDF Chuckwalla	CACA 51950	Solar	Pre-NOI
BrightSource Sonoran West	CACA 51967	Solar	Pre-NOI

In addition to applications that reach the Draft EIS milestone within 60 days of the DRECP's Draft EIS, applications in a SEZ that are considered "pending projects" under the Solar PEIS ROD would not be subject to the DRECP. The list above includes additional solar applications in the Riverside East and Imperial East SEZs filed before June 30, 2009.

If a solar or wind ROW grant approved under these provisions is terminated, the BLM will consider amending its land use plan to be consistent with the land use plan for lands surrounding the ROW area. The BLM will consider the goals and objectives of the DRECP when processing future applications in areas where ROWs approved under these provisions are terminated.

II.3.2.2 BLM Conservation Areas

II.3.2.2.1 National Conservation Lands

Public Law 111-11, the Omnibus Public Lands Management Act of 2009, formally established the NLCS which is made up of BLM lands with nationally significant ecological, cultural and scientific values, and is managed to conserve, protect and restore these values. Throughout this document components of the NLCS will be referred to as the National Conservation Lands. Public Law 111-11 applies to the public lands within the boundary of the CDCA, and a different boundary from the DRECP Planning Area. For proposed National Conservation Lands decisions, the BLM considered all the public lands within the CDCA boundary, but not the public lands managed by the Bishop and Bakersfield Field Offices and located outside the CDCA boundary.

Public Law 111-11 identified types of BLM-managed conservation lands to be part of the system, including Wilderness Areas, Wild and Scenic Rivers, National Monuments, National Conservation Areas, National Scenic and Historic Trails, Wilderness Study Areas, and other similar designations. Included within the identified categories, the law states that "public land within the California Desert Conservation Area administered by the Bureau of Land Management for conservation purposes" is to be incorporated into the system. Also included in P.L. 111-11 is direction that BLM is to rely upon ecological, cultural and scientific values in identifying lands administered for conservation purposes.

Of the 10.8 million acres of BLM-administered public lands within the CDCA, approximately 3.9 million acres are currently designated National Conservation Lands. These include Wilderness, Wilderness Study Areas, Wild and Scenic Rivers, National Scenic and Historic Trails, the Santa Rosa and San Jacinto Mountains National Monument and other congressional designations, to include the Mountain Pass Dinosaur-Trackway and the Desert Lilly Sanctuary. The decision to include lands in the NLCS through the DRECP are designed as a planning decisions, and can be modified through a land use plan. These lands, identified for inclusion in the NLCS by way of decisions in the DRECP do not alter, and are in addition to, current National Conservation Lands designations.

Many other areas of the CDCA have special resource values and are currently managed for conservation purposes under administrative designations made through the land use planning process. These include ACECs, Desert Wildlife Management Areas (DWMAs), and Habitat Management Areas (Mohave Ground Squirrel, Flat Tailed Horned Lizard, and the Coachella Valley Fringe-toed Lizard Habitat Management Areas). As a major conservation planning effort for the deserts in southeast California, the DRECP provides the BLM and the public an opportunity to evaluate existing administratively designated conservation areas and to determine which lands meet the definition in Public law 111-11 for inclusion as National Conservation Lands.

The DRECP is a major conservation planning effort for the California desert and provides the BLM and the public with an opportunity to evaluate existing administratively designated conservation areas and to clarify which lands meet the definition in Public law 111-11 for inclusion as National Conservation Lands. Alternative configurations of lands with nationally significant ecological, cultural and scientific values are analyzed for their conservation value and importance. All of the alternatives described below meet the requirements of Public Law 111-11 by applying existing BLM management authority and balancing conservation with renewable energy and other public land multiple uses. The need to support the GCP and the NCCP goals elevates the significance of conservation actions in some areas and for some specific conservation lands. For the purpose of National Conservation Land identification directed under Public Law 111-11, the DRECP will consider all lands within the CDCA boundary as identified in the FLPMA of 1976 (Public

Law 94-579). All other conservation management designations and actions rely on other authorities and management approaches commonly available through land use planning for BLM-managed public lands.

The National Conservation Lands were identified based on having nationally significant ecological, cultural and scientific values as called for under Public Law 111-11 and using the criteria listed below. The BLM identified the footprint for National Conservation Lands in the range of alternatives by use of the following criteria. Alternative configurations of lands with nationally significant ecological, cultural and scientific values are analyzed for their conservation value and importance, using the following criteria.

Primary criteria:

- **Ecological**
  - Species habitat – High quality habitat for multiple native species; or critical habitat for a federally listed species
  - High level of ecological diversity
  - Illustrates a significant natural value or phenomenon that is exemplary in the physiographic region
- **Cultural**
  - Contains a nationally significant prehistoric or historic cultural site that is eligible for the National Register of Historic Places.
  - Contains a nationally significant cultural landscape that provides context and setting for historic properties or is of religious or cultural importance to Indian Tribes.
- **Scientific**
  - Area that has been the focus for significant scientific study or has a natural or cultural value, natural process, or other occurrence of high scientific value for potential future study.

Additional criteria used to develop alternatives:

- **Development pressure** – Area has natural or cultural values representative of other areas under development pressure, or adjoins DFAs.
- **Landscape intactness** – Relatively undisturbed features, unmodified natural environment of fairly large size, and not impacted by numerous developments (e.g. absence of extensive road network, multiple physical facilities such as communication sites, power lines etc.)

- **Scenic quality** – Higher levels of scenic quality as determined by the BLM Visual Resources Inventory process.
- **BLM jurisdiction** – Primarily large blocks of BLM lands (may include interspersed lands managed by other agencies for conservation purposes).
- **Landscape Linkages –** Habitat and landscape-scale linkages to existing National Conservation Lands and other conservation units such as Wilderness Areas, Wilderness Study Areas, Wild and Scenic Rivers, National Trails, etc.

The Preferred Alternative emphasizes habitat connectivity and cultural-botanical resource locations. This alternative contains important wildlife linkages, including critical habitat under the ESA, and other lands with high ecological diversity and integrity. This alternative also includes smaller, yet highly significant, landscape units such as significant cultural and botanical sites that do not link to other protected areas but are still considered to contain nationally significant ecological, cultural, or scientific values. National Conservation Lands (also known as National Landscape Conservation System [NLCS] lands) in this alternative include only areas where BLM has primary jurisdiction (no checkerboard of BLM/private lands), and where the landscape is intact with no large-scale developments. The use allocations of this alternative allow for a variety of uses as long as they can be managed to be compatible with protecting National Conservation Land values. The National Conservation Lands include existing transmission corridors.

This alternative would designate 4,369,000 acres as components of the National Conservation Lands on BLM-administered lands, which includes 849,000 acres within existing conservation areas (LLPAs and MEMLs) and 3,520,000 acres as part of the BLM LUPA conservation designations.

II.3.2.2.1.1 Management of the National Conservation Lands

Although Public Law 111-11 provides for lands within the CDCA to become components of the National Conservation Lands, it does not include or define a process for developing specific management direction to conserve, protect and restore resource values on the identified conservation lands. In addition to the decision to designate lands as part of the NLCS, the each alternative of the LUPA provides specific management direction to meet the objectives of P.L. 111-11. This management direction has been developed at three levels—Planning area wide, subarea, and site or zone specific. All three levels must be considered together to determine the comprehensive direction that will guide management of the National Conservation Lands in the DRECP Planning Area.

1. Planning Area Wide National Conservation Land Management Direction

The use allocations for the National Conservation Lands in the CDCA are the allowable uses that would apply to all National Conservation Lands within the CDCA. The use allocations for the Preferred Alternative are listed below. For resources where there are no specific use allocations for National Conservation Lands, Plan-wide rules would apply unless otherwise specified in the Special Unit Management Plans (Appendix L).

- **Comprehensive Trails and Travel Management –** National Conservation Lands would be designated in accordance to the appropriate Transportation and Travel Management Plan. Future travel management planning will emphasize travel on routes that provide for the enjoyment and enhancement of the ecological, cultural, and scientific values for which individual units are designated, or necessary administrative access to conserve, protect and restore area values.
- **Cultural Resources** - With the exception of research, no actions that would result in adverse effects to historic properties, as defined under Section 106 of National Historic Preservation Act and the implementing regulations at 36 CFR Part 800, will be authorized.
- Lands and Realty
- Land Use Authorizations
- **Sites Authorizations (Non-Renewable Energy, Non-Linear ROWs)** – National Conservation Lands would be avoidance areas.[28] Authorization for site ROWs, leases, or permits that would impact the values for which National Conservation Lands are designated must include mitigation/compensation resulting in a net-benefit to the National Conservation Land unit so that the restoration intent of National Conservation Land management is met. Site authorizations that protect or enhance conservation values, such as those granted as compensatory mitigation for Covered Activities within DFAs or for habitat restoration, would be allowed.
- **Renewable Energy Generation** – National Conservation Lands would be exclusion areas for renewable energy ROWs (development and testing).
- Linear Rights-of-Way
- Transmission would be allowed in existing corridors only.
- National Conservation Lands would be avoidance areas for all other linear ROWs.

[28] Defined as "areas to be avoided but may be available for location of rights-of-way with special stipulations." (BLM Land Use Planning Handbook (H-1601-1), Appendix C, page 21.

- Authorization for linear ROWs that impact the values for which the National Conservation Land unit is designated must include mitigation/compensation resulting in a net benefit to the National Conservation Land unit so that the restoration intent of National Conservation Land management is met.
- Land Tenure
- Exchange would be permitted primarily to acquire non-BLM lands within the National Conservation Lands unit (no lands exchanged out or disposed of unless other conservation lands are acquired that result in a net benefit to the values of the National Conservation Land unit).
- Purchase and donations would also be allowed to acquire non-BLM lands within the National Conservation Lands unit.
- National Conservation Land inholdings would be a priority for acquisition from willing sellers. All inholdings would become part of the National Conservation Lands unit upon acquisition and be subject to associated management requirements.
- Minerals
- **Locatable Minerals –** For the purposes of locatable minerals, National Conservation Lands would be treated as "controlled" or "limited" use areas in the CDCA, requiring a Plan of Operations for greater than casual use under 43 CFR 3809.11.
- **Saleable Minerals** – National Conservation Lands would be available for saleable mineral development, and would require mitigation/compensation that results in net benefit for National Conservation Lands values.
- Leasable Minerals
- National Conservation Lands would be available for leasing with a no surface occupancy stipulation.
- Geothermal and other leasing must protect groundwater quality and quantity.
- **Recreation and Visitor Services** – Commercial and competitive Special Recreation Permits are a discretionary action and would be issued on a case by case basis, for activities consistent with the values of the National Conservation Lands unit and would be prohibited except for those uses that would enhance the opportunity for visitors to experience and enjoy the ecological, cultural, and scientific values of the National Conservation Land unit and would not adversely impact the nationally significant ecological, cultural, or scientific values.
- **Water Resources** – Apply for water rights on a case by case basis to protect water dependent National Conservation Land values.

- **Disturbance caps**[29] - Development in National Conservation Lands would be limited to 1% of total authorized disturbance, or to the level allowed by collocated ACEC, whichever is more restrictive.

2. National Conservation Land Subareas — Description of Values to be Protected

The vast landscapes of the CDCA have been divided into subareas that encompass similar physiography and/or ecological values. Each of these subareas includes a unique combination of specific ecological, cultural and scientific values. Based on the theme of each alternative, the subarea description and maps describe what landscapes and values will be included in the National Conservation Lands. Figure II.3-4 shows the National Conservation Lands on BLM-administered lands. Appendix G provides supplemental maps showing the National Conservation Lands by ecoregion subarea.

The footprint for each subarea is described below.

3. Area-Specific Management Prescriptions for National Conservation Lands and ACECs

Much of the acreage proposed for National Conservation Lands is also identified as existing or proposed ACECs. ACECs are an administrative designation which identifies areas with significant values that require special management. The CDCA currently has over 70 ACECs with a history of protective identification and management of their special values extending back to the original 1980 CDCA Plan. These ACECs and their area-specific values were used as a starting point for identifying potential National Conservation Lands in the DRECP and were evaluated using the 10 criteria described in the introduction above.

Instead of replacing the ACECs or portions of ACECs identified for inclusion as National Conservation Lands with a single designation, both designations have been retained in this draft document to provide for continuity and historical context. To the extent that there is "overlap" between ACEC and National Conservation Lands in the final DRECP decision document, it is the BLM's expectation that it will identify these areas solely as National Conservation Lands. In general, the National Conservation Lands will be managed as larger ecoregional units to protect landscape-wide values, while the ACECs are targeted towards area specific values. However, the site-specific protections of the individual ACEC units complement the broader landscape protections and would be carried forward for particular areas or zones within the broader National Conservation Lands to ensure that the individual values are protected.

[29] Wildlife habitat disturbance caps only apply to lands not already included under ACECs or Wildlife Allocation disturbance caps, as described in the Special Unit Management Plans in Appendix L.

In summary, where a National Conservation Lands unit and an ACEC overlap, the National Conservation Lands would incorporate the site-specific management objectives and use allocations of the underlying Special Unit Management Plans (National Conservation Lands and ACEC) in Appendix L. Where National Conservation Lands are not underlain by ACECs, site-specific objectives have not been identified and these lands would be managed under the CDCA-landscape wide National Conservation Land described above.

II.3.2.2.1.2 Subarea Descriptions

Basin and Range Subarea

Background Information

The Basin and Range subarea extends from the Nevada state line west to the Sierra Nevada Mountain Range, approximately 85 miles east to west at its widest part, and 130 miles north to south. Elevations range from 1,000 to 12,000 feet; mountains rise abruptly from the desert floor, so that even across short distances, plant communities vary greatly. These include Joshua tree woodland, sagebrush steppe, pinyon-juniper woodland, and cottonwood/willow riparian vegetation; and in the White-Inyo Mountain Range, unique alpine vegetation and subalpine bristlecone and limber pine woodlands. The south end of the subarea gradually transitions to Mojave Desert vegetation dominated by creosote bush and white bursage. Streams, springs, and riparian areas serve as oases in the harsh, arid environment.

These specially designated units play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan**:** White Mountains, Piper Mountains, Sylvania Mountains, Inyo Mountains, Malpais Mesa, Manly Peak, Coso Range, Darwin Falls, Argus Range, Surprise Canyon, El Paso Mountains, Sacatar Trail, and Owens Peak Wilderness Areas; Great Falls Basin Wilderness Study Area; and Cottonwood Creek Wild and Scenic River.

The following areas are not managed by the BLM and are not part of the plan alternatives but contribute to the habitat conservation goals of the DRECP: Death Valley National Park, and the eastern portion of Red Rock Canyon State Park.

Alternative Description

<u>Ecological Values</u>

This alternative would include some of the largest undeveloped expanses of public lands. The diversity of vegetation alliances supports diverse wildlife species, including desert tortoise, Mohave ground squirrel, Golden Eagle, Burrowing Owl, Sierran tree frog, red-

spotted toad, and numerous bird and reptile species. The alternative also includes habitat for sensitive species such as desert bighorn sheep, Inyo slender salamander, and Swainson's Hawk; numerous sensitive bat species such as Townsend's big-eared bat associated with old mine features; and potential winter habitat for a Greater Sage-Grouse population at the southwest extreme of their range. Unusual monarch butterfly over-wintering sites occur in the riparian canyons of the Inyo Mountains. Diverse year-round resident wildlife species of the canyons include ringtails, mountain lions, bobcats, kit foxes, and gray fox.

The northern half of this subarea includes parts of Deep Springs and Fish Lake Valleys, dominated by shrubs such as *Menadora*, winterfat, and other warm-season shrubs and grasses that receive summer rains. Deep Springs Valley is a high desert valley in the Inyo-White Mountains that contains Deep Springs Lake, a shallow salt lake. Migrating birds flock to the lake and associated springs during the spring and fall. The BLM Sensitive black toad (*Anaxyrus exsul*) is an isolated species restricted to a few wetlands in Deep Springs Valley. This alternative includes black toad habitat north of California State Hwy 168.

To the south are the lower-elevation Eureka and Saline Valleys, where the Great Basin transitions into the Mojave Desert; Panamint Valley and Lake; and the Panamint, Slate, and Argus Mountain Ranges. The valleys have sparsely scattered springs, wetlands, and ephemeral wetlands; and support a high diversity of plant and wildlife species, including endemic species such as alkali fairy shrimp, spring snails, Panamint daisy, Panamint dudleya, and the Panamint alligator lizard. Panamint Valley's unique desert wetland communities such as Warm Sulfur Springs include mesquite bosques, and both freshwater and saltwater marshes that provides habitat for waterfowl, wading birds, amphibians, and other species. Sand dunes are home to endemic invertebrate species, such as a scarab beetle and a weevil, *Trigonoscuta* (as yet unnamed). Greasewood (*Sarcobatus vermiculatus*) communities occur in the saline soil of the playa areas. In California, Utah pickleweed (*Sarcocornia utahensis*) occurs only in this area and in adjacent Death Valley National Park. This alternative also includes another unusual greasewood plant assemblage growing on sand dune hummocks.

The National Conservation Lands in this alternative also include designated critical habitat for the Inyo California Towhee, a federally listed Threatened species found only in isolated riparian areas of the Argus Mountain Range.

National Conservation Lands in the Preferred Alternative include habitat linkages among a number of designated BLM Wilderness Areas, the Inyo National Forest, undeveloped military lands, and Death Valley National Park, with intact ecosystems connecting these large areas. These linkages for wildlife migration are critical to the conservation of certain species, especially with respect to climate change. These species include the desert tortoise,

desert bighorn sheep, and Mohave ground squirrel. National Conservation Lands in this alternative include four core population centers of the Mohave ground squirrel, which is listed by the State as Threatened and by the BLM as Sensitive.

National Conservation Lands in this alternative include a segment of the Pacific migratory bird flyway. Songbirds, shorebirds, and waterfowl pass through Indian Wells Valley and Rose Valley on their way to breeding grounds. The flyway has stop-over riparian and wetland habitat in the Sierra Nevada canyons and at Little Lake and Haiwee Reservoir. Riparian areas here provide important migratory stop-over habitat for the federally listed Least Bell's Vireo and Southwest Willow Flycatcher. This flyway also provides excellent habitat for Golden Eagles, Prairie Falcons, and other raptors, with nearby cliffs for nesting and the valley floor for foraging. Little Lake Watchable Wildlife Area, close to both water and cliffs, is an exceptional place to view swallows, raptors, and waterfowl.

Another designated Watchable Wildlife Area included in this alternative's National Conservation Lands, the Haiwee Deer Winter Range site, offers opportunities to see a different kind of vital seasonal migration: that of the East Monache mule deer herd. As heavy winter snows begin to fall in the mountains, 600-700 deer move down to the valley floor.

Cultural Values

The cultural values of the Basin and Range subarea are as diverse as the ecological values and include some of the richest cultural areas in the California desert, including landscapes and sites associated with the earliest prehistoric Native American occupation, and some of the oldest historic mining areas in California. This area falls within the traditional homelands of several tribal groups; sacred sites, traditional cultural places, and areas of religious and cultural significance to these groups are found throughout. Abundant cultural properties include well-known prehistoric and historic archaeological sites and properties of traditional religious and cultural importance to Indian Tribes. There is a high potential for hundreds of cultural sites that have not yet been recorded.

Within National Conservation Lands under the Preferred Alternative, resources listed on the National Register of Historic Places include Fossil Falls Archaeological District, Last Chance Canyon Archaeological District, Saline Valley Salt Tram, and Ayers Rock Petroglyph Site. Many more sites are eligible for listing, including the First Los Angeles Aqueduct, the mining town of Cerro Gordo, the Southern Owens Valley Mortuary Complex, historic White Mountain City, the Manzanar Reservoir and Sand Trap, and the charcoal pits at Conglomerate Mesa.

In the northernmost National Conservation Lands in this alternative, in Fish Lake, Deep Springs, and Eureka Valleys, archaeological research has been limited but has nonetheless

identified prehistoric village complexes, lithic scatters, and rock art sites. Historic use has been associated with mining, particularly the towns of White Mountain City at the mouth of Wyman Canyon and Roachville at the mouth of Cottonwood Creek.

Conglomerate Mesa has a unique collection of historic era mining features, particularly associated with early charcoal production for Cerro Gordo and smelters in the Owens Valley. The area is also identified in the ethnographic literature as a traditional pinyon nut gathering location, as evidenced by the presence of brush structures, lithic materials, and ceramics dating to the contact period in the Owens Valley and earlier. The mining history of this area details battles between native groups and charcoal burners who were competing for the pinyon resources. Cerro Gordo was the largest silver producing mine in Inyo County and provided much of the revenue required to build the city of Los Angeles.

The canyons of the eastern Sierra Nevada were a critical part of the Native American seasonal round. Not only did these places have necessary water in the summer, they provided access points to the hunting grounds of the Sierra Nevada crest and sacred areas associated with mountains. They also served as conduits for trade with groups over the mountains in the Central Valley and beyond to the Coast. These sites include many large, prehistoric National Register of Historic Places eligible properties in relatively undisturbed contexts, and have high densities of obsidian and other types of lithic material. The sites in these canyons have the potential to answer some of the most pressing questions in California archaeology, particularly about trade, human adaptation to changing environments, and culture contact and interaction.

The National Conservation Lands in the Preferred Alternative also encompass portions of the footprint of the Los Angeles Aqueduct. The first aqueduct, built by the Los Angeles Department of Water and Power in 1913, redefined the history of Owens, Rose, and Indian Wells Valleys. The First LA Aqueduct has been listed as a Historic Civil Engineering Landmark; and, with all of the associated labor camps along the line, has been recommended eligible for listing on the National Register of Historic Places.

The area between the eastern slope of the Sierra Nevada, the southern shoreline of the Owens Dry Lake, Haiwee Reservoirs, and the Coso Mountain Range has extensive rock art, prehistoric habitation sites, and large scatters of lithic materials from the nearby Sugarloaf Obsidian Source, located on China Lake Naval Air Weapons Station. Prehistoric burial complexes also occur throughout this area. At the Rose Spring archaeological site complex, excavations revealed a well stratified subsurface archaeological deposit which was successfully used to date the introduction of bow and arrow technology to Eastern California. The bow-and-arrow event, about 1500 to 1000 years ago, changed the patterns of prehistory not only in this region but throughout the Great Basin and neighboring southwest.

This alternative also includes National Conservation Lands designation for the Ayers Rock area, which encompasses a complex of prehistoric archaeological resources, the most prominent of which is a monolithic boulder renowned for panels of Native American rock art, specifically, painted polychrome pictographs. Limited excavation in the vicinity has uncovered a variety of cultural material, including basketry, beads, and human remains.

Seven miles from Ayers Rock on the China Lake Naval Air Weapons Station are two of the most important locales in the region: the Coso Hot Springs, a National Register Listed Sacred Site, and the Coso Rock Art District, a National Historic Landmark and World Heritage Site. National Conservation Lands in this alternative encompass much of the land between these sacred sites on Navy lands and resources on BLM lands, thus including a culturally significant landscape.

In the Fossil Falls Archaeological District, cultural research attributes the rock art as a distinctive style termed Coso Representation, associated with local Numic-speaking groups such as the Northern Paiute, Panamint Shoshone, Coso Shoshone, and Kawaiisu. Studies including excavations at the Stahl Site, south of Fossil Falls, have identified cultural components from more than 10,000 years before present. Also included in this alternative's National Conservation Lands is the Last Chance Canyon area, with a portion of the Last Chance Canyon National Register Archaeological District which has an assemblage identifying human occupation in excess of 10,000 years. The area includes open air campsites, extensive house ring complexes, rock shelters, lithic reduction locales, cryptocrystalline quarries, milling complexes, and petroglyphs. Archaeological materials represent aboriginal occupation from the Late Pleistocene to the historic period.

Warm Sulfur Spring in Panamint Valley is a Tribal Cooperative Activity/Special Use Area for traditional practices within the Timbisha Shoshone Homeland. The Timbisha tribe attaches considerable importance to the springs, desert marsh, and mesquite groves of this area.

Historic resources are likewise abundant, many of which are superb examples of sites associated with exploration by the Spanish and Euro-Americans, contact with Native American communities in California, the advancement and development of the Western Frontier, American vernacular architecture, mining landscapes in the West, and the Civilian Conservation Corps. Historic mining features predominate the historic archaeological assemblage, particularly in the Panamint-Argus region, Trona-Searles Lake area and the Darwin region.

Many prehistoric and historic resources in this alternative's National Conservation Lands have not been formally evaluated, but are considered eligible for listing on the National Register of Historic Places. This alternative includes large tracts of lands with historic and

cultural landscapes that have long been recognized but have only recently been documented through ongoing research.

This alternative has large tracts of National Conservation Lands with Native American values including sacred sites, places of religious and ceremonial importance, and areas of traditional use and gathering for the Kawaiisu, Tubatalabal, Chemehuevi, Timbisha-Shoshone, Panamint Shoshone and Owens Valley Paiute-Shoshone. Resource values that have been identified as having particular significance to these cultural groups include those near Owens Dry Lake and Haiwee Reservoir.

Scientific Values

Sensitive terrestrial and aquatic species, many of them endemic to this subarea, and prehistoric and historic cultural resources, are the focus of numerous scientific studies on the National Conservation Lands in this alternative.

Scientific studies are ongoing in core population areas of the Mohave ground squirrel. The Townsend's big-eared bat is the focus of several studies, as populations of this species are steeply declining; research on maternity colonies has recently been conducted in the White-Inyo Range. California voles have been the subject of surveys in eastern Sierra canyons.

PRBO Conservation Science collects data on migratory birds that use the Pacific migratory bird flyway along the east side of the Sierra Nevada. Researchers are studying Golden Eagles to better understand their home ranges and migratory movements in the southern Sierra front country. Studies also address the Inyo California Towhee.

Researchers are studying the biodiversity of aquatic invertebrates in the Argus Range. Others conduct research on halophytic microbes and viruses in the saline wetlands of the Panamint Lake area. Studies of Joshua trees have been conducted in Fish Lake Valley at the northern extent of their range.

National Conservation Lands in this alternative provide outstanding examples of cultural resource properties with extensive scientific values. Previously excavated sites in the region have stratigraphic sequences of projectile points associated with radiocarbon dates that serve as the basis for the cultural chronology used by archaeologists throughout the region and state today. Archaeological, cultural, and historic research being conducted on these lands is contributing greatly to understanding human adaptation in a wide range of ecological zones; landscape use and mobility by prehistoric and historic people; and the diversity and interaction spheres of cultural groups in this and surrounding regions.

The Trona Pinnacles were designated by as a National Natural Landmark in 1968 to protect one of the nation's best examples of tufa formation. This unique landscape consists of more than 500 tufa (calcium carbonate) pinnacles rising from the bed of the Searles Dry Lake basin. The tufa spires, some as high as 140 feet, were formed underwater 10,000 to 100,000 years ago when Searles Lake was a link in an interconnected chain of Pleistocene lakes stretching from Mono Lake to Death Valley. Tufa is a porous rock formed as a deposit when springs interact with other bodies of water. As rare geologic features, they offer excellent opportunities for scientific research.

Acreage

This alternative would include approximately 377,000 acres of National Conservation Lands in the Basin and Range subarea in the Preferred Alternative.

Coachella Valley

Background Information

The Coachella Valley forms the north half of the Salton Sea Trough, the large basin for ancient Lake Cahuilla. The valley extends northwest to southeast for approximately 45 miles from the southeast San Bernardino Mountains to the Salton Sea, the largest lake in California, and is about 15 miles wide along most of its length. The broad, low-lying valley floor, featuring the Coachella Dunes, comprises the westernmost limits of the Sonoran Desert at the Santa Rosa and San Jacinto mountains. Other mountain ranges bounding the valley are the Little San Bernardino Mountains to the north and the Chocolate Mountains on the east.

Watersheds from the mountain ranges drain into the Salton Sea. The San Andreas Fault crosses the valley from the Chocolate Mountains in the southeast corner and along the centerline of the Little San Bernardino Mountains. Along the San Andreas Fault and subsidiary faults, desert palm oases appear where tectonic movements allow artesian water to surface from deep in the earth.

The Coachella Valley is a major point of entry into the California desert for visitors from the Los Angeles and Riverside-Ontario-San Bernardino metropolitan areas, and many visitors from elsewhere in the United States and from Canada come in the winter for sun, warmth, and recreation. By far the most populous subarea in the Plan Area and one of the fastest growing regions in Riverside County, the valley expects to add 500,000 people over the next 10 years. Wind energy production is an important commercial enterprise in San Gorgonio Pass, one of the earliest wind farms established in the United States. The mostly urbanized valley floor, and the orderly rows of industrial wind turbines in the pass, contrast strikingly with the abrupt steep slopes of the rugged mountain ranges.

Existing BLM National Conservation Lands play an important conservation role in the subarea. Since they are already managed by the BLM or other federal and state agencies for conservation purposes, they are not subject to the alternatives under this plan. All or portions of the following BLM Wilderness Areas are within the subarea: San Gorgonio, Santa Rosa, Mecca Hills and Orocopia Mountains. This subarea also includes the Santa Rosa and San Jacinto Mountains National Monument, the Big Morongo Preserve, and the Coachella Valley Fringe-toed Lizard Preserve.

The following areas are not managed by the BLM, and are not part of the plan alternatives but contribute to the habitat conservation goals of the DRECP: Joshua Tree National Park, Coachella Valley National Wildlife Refuge, Mount San Jacinto State Park, Salton Sea State Recreation Area, Indio Hills State Park, Hidden Palms Ecological Reserve, Magnesia Springs Ecological Reserve, Oasis Springs Ecological Reserve, University of California Deep Canyon Desert Research Center, University of California Oasis de los Osos, Indian Canyons and Whitewater Canyon Preserve.

Alternative Description

Ecological Values

The National Conservation Lands under this alternative would conserve species indigenous to the Coachella Valley that have special status under either the federal or California Endangered Species Act, or that have been proposed or are candidates for federal listing. The diverse desert landscape of the Coachella Valley provides habitat for dozens of plant and animal species, some found nowhere else in the world. The rich endemic flora includes the endangered Coachella Valley milk-vetch at the Coachella Valley Preserve ACEC, and endangered triple-ribbed milk-vetch at Whitewater Canyon ACEC. The California Native Plant Society lists more than 120 rare plants from the Coachella Valley, an indication of the many distinct habitats that occur in the subarea. The BLM has designated 14 plants as special status species, several of which are found only in the Coachella Valley subarea, including the Mecca aster and Orocopia sage found in designated wilderness and in the Chuckwalla ACEC.

Native animals such as the desert pupfish and Yuma Clapper Rail at Dos Palmas ACEC, and the peninsular population of desert bighorn sheep in the Santa Rosa and San Jacinto National Monument, are also federally listed Endangered species. The Agassiz's desert tortoise in Chuckwalla ACEC, and the Coachella Valley fringe-toed lizard in Coachella Valley ACEC, are listed as Threatened. Remaining dune ecosystems in the north end of the valley provide habitat for the lizard and other endemic plants and animals. These vital wildlife habitats are encompassed in National Conservation Lands under the Preferred Alternative.

Also included is Big Morongo Canyon Preserve, one of the most important birding areas in California with over 250 recorded bird species and 72 resident breeding species. Nestled among the Little San Bernardino Mountains, the canyon is one of the 10 largest cottonwood and willow riparian habitats in California. Its upstream end lies in the Mojave Desert; downstream, it opens into the Sonoran Desert. The Morongo Fault running through the canyon causes water draining from the surrounding mountains to form Big Morongo Creek, marsh habitat and mesquite thicket. This diverse landscape has been an important part of the Morongo Basin's natural and cultural history.

Whitewater Canyon is included as National Conservation Lands because it is a unique transitional ecotone where three ecoregions converge: Mojave Desert, Sonoran Desert, and California Coast. The canyon supports dense riparian habitat for endangered, threatened, and sensitive species of flora and fauna. The San Andreas Fault slices across the ancient river and the tectonic plates create an underground dam in the Earth's crust between ten and 60 miles deep at Bonnie Bell, where the river backs up as a massive underground lake. This has created a natural wildlife sanctuary with hundreds of rare old growth Fremont cottonwood trees in a rich riparian habitat, affording an abundance of food, water, shelter and critical habitat for two endangered bird species, Southwest Willow Flycatcher and Least Bell's Vireo. The canyon has robust populations of desert bighorn sheep, mule deer and black bear and is an important wildlife corridor between the San Bernardino and San Jacinto Mountains. The Big Morongo Canyon Preserve is a Watchable Wildlife site and serves the community as an important site for youth and environmental education programs.

Dos Palmas Preserve has another of the rare riparian areas in the subarea, with extensive palm oases. The site is managed to protect endangered desert pupfish and Yuma Clapper Rail and other sensitive species as part of mitigation efforts for the Coachella Canal. This preserve is included in National Conservation Lands in this alternative.

Also included is are portions of the Coachella Valley Preserve, the umbrella designation for a large contiguous complex which includes the Coachella Valley National Wildlife Refuge, the BLM Willow Hole/Edom Hill ACEC, Indio Hills State Park, and Coachella Valley State Ecological Reserve. It has critical habitat for the threatened Coachella Valley fringe-toed lizard and the endangered Coachella Valley milk-vetch, and holds most of the remaining Coachella Dunes, the essential sand source for the habitat of these two species.

The alternative's National Conservation Lands in the mountain ranges on the north, in Whitewater Canyon ACEC and Big Morongo ACEC, encompass a major transition zone between the Colorado/Sonoran Desert to the south and the Mojave Desert to the north. These include a long band of wildlife habitat connectivity extending from the Mecca

Hills and Orocopia Mountains Wilderness Areas north to the southern boundary of Joshua Tree National Park.

Cultural Values

Native American settlements, trails, and traditional plant gathering sites, along with historic structures and other sites used during early European American settlement, are found throughout the subarea. Cultural resources encompassed by National Conservation Lands in this alternative include many significant cultural sites which document the lives of prehistoric and historic peoples.

Archaeological research has shown that humans have occupied sites at Whitewater Canyon, Snow Creek, Indian Canyons and other sites represented by proposed National Conservation Lands in the Coachella Valley for at least 3,000 years. Ancestors of the Agua Caliente Band of Cahuilla Indians settled here centuries ago and developed complex communities at many sites including Palm, Murray, Andreas, Tahquitz, Snow Creek, Whitewater and Chino Canyons. There are many sacred sites and landscape features of great importance to Cahuilla culture. Cahuilla villages were generally located in or near the mouth of canyons in the subarea, and in some instances there were both summer villages at higher elevations and winter villages closer to the valley floor. Many prehistoric cultural sites are in the Santa Rosa and San Jacinto mountains, with others in the valley. Tangible evidence includes ancient trails; traditional mortars and pestles; rock art; and occupation, village and gathering sites. Several sites are listed or nominated for the National Register of Historic Places.

At Dos Palmas Preserve on the shoreline of ancient Lake Cahuilla, native peoples settled and drew on the food resources from the lake. The Preserve has important cultural resources at the sites of former settlements. These are included in National Conservation Lands under this alternative.

Recognition as National Conservation Lands will contribute greatly to cooperative management of Coachella Valley's rich cultural resources undertaken jointly by the BLM and the Agua Caliente Band of Cahuilla Indians, Morongo Band of Mission Indians, and Torres-Martinez Band of Desert Cahuilla Indians.

Scientific Values

This alternative's National Conservation Lands in the Coachella Valley subarea have high scientific and research values. Studies currently underway address many species of plants and animals that are threatened or facing extinction, including the Coachella Valley fringe-toed lizard, Peninsular bighorn sheep, desert pupfish and Agassiz's desert tortoise. These

studies provide a wealth of knowledge on the health of the species' populations, their habitats, and landscape-scale ecosystems upon which they depend.

Further studies of groundwater and climate change history are needed to guide future management of the Coachella Valley. Opportunities such as those at Dos Palmas abound for advancing the technologies to efficiently restore and enhance disturbed desert habitats so that they continue to benefit wildlife and to counteract adverse impacts from climate change. The pool of scientific expertise in local Coachella Valley communities, the University of California system, and adjacent metropolitan areas can forge new understanding of sustainable ecosystems and human communities in a hot desert ecosystem. Opportunities for joint landscape research with Joshua Tree National Park concerning the function of habitat connectivity between the Mojave and Sonoran deserts as climate change progresses will inform scientists and managers as they refine conservation planning.

The Coachella Valley has very high seismic activity due to the San Andreas and San Jacinto Faults and proximity of two tectonic plates, and is likely to again be the epicenter of devastating earthquakes. Studies of earth movements are critical. Fault zones run through the Mecca Hills Wilderness and the Coachella Valley Preserve.

Archaeological and cultural research examines humans' ways of adapting to this arid environment, and contributes to better understanding of diverse cultures.

<u>Acreage</u>

This alternative would include 72,347 acres of National Conservation Lands in the Coachella Valley subarea in the Preferred Alternative.

Colorado Desert

Background Information

The Colorado Desert is the western extension of the Sonoran Desert, hotter and drier than parts to the east. Bounded on the east by the Colorado River, it reaches across southeastern California to meet the transition zone with the Mojave Desert in the northwest. Watersheds from several mountain ranges drain into the Colorado River. Diverse, intact habitats in this subarea include upland shrub scrub dominated by creosote, saltbush species, brittle bush, cacti, and ephedra. Dunes such as the Palen Dunes, Rice Dunes, and Chuckwalla Dunes provide habitat for sand-dependent plant species. Subsurface moisture in desert washes supports stands of microphyll woodlands with old-growth stands of blue paloverde and ironwood. Springs provide the only permanent water sources in the subarea away from the Colorado River. Wildlife species found in many parts of the subarea include mule deer,

bobcat, kit fox, desert kangaroo rat, cactus mouse, black-tailed jackrabbit, Gambel's Quail, American badger, and desert bighorn sheep.

Existing BLM National Conservation Lands play an important conservation role in the subarea. These lands have been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan. These lands include all or parts of Sheephole Valley, Cadiz Dunes, Old Woman Mountains, Turtle Mountains, Palen-McCoy, Big Maria Mountains, Rice Valley, Riverside Mountains, Chuckwalla Mountains, Indian Pass, Little Chuckwalla Mountains, Little Picacho, Palo Verde Mountains, and Picacho Peak Wilderness Areas. The Congressionally designated Desert Lily Sanctuary is also within the subarea.

The following areas are not managed by the BLM and are not part of the plan alternatives but contribute to the habitat conservation goals of the DRECP: Joshua Tree National Park, Cibola National Wildlife Refuge, Imperial National Wildlife Refuge; Picacho State Recreation Area.

Alternative Description

Ecological Values

National Conservation Lands in this alternative include critical habitat for Agassiz's desert tortoise, a federally listed Threatened species, and habitat for 60 other special status plants and animals. This alternative also encompasses important habitat for desert bighorn sheep, an iconic species with declining numbers, such as habitat for the Chuckwalla and Palo Verde Mountain bighorn sheep herds. The National Conservation Lands would incorporate important linkages among 14 BLM Wilderness Areas from the Colorado River to Joshua Tree National Park, providing desert habitat connectivity for terrestrial reptiles, mammals and Burrowing Owls.

Mountain cliff sites in designated BLM Wilderness Areas in this subarea are important to maintaining robust Golden Eagle populations. The chain of Wilderness Areas lining the Colorado River, together with the linkages included in the National Conservation Lands in this alternative, provide habitat continuity for eagle foraging.

National Conservation Lands in this alternative would include important Sonoran Desert microphyll woodlands. Old-growth microphyll woodlands provide the highest amount of aboveground biomass of any plant community in the Sonoran Desert outside of the Colorado River riparian zone and constitute a reservoir for carbon sequestration. The complex physical structure and cover of the woodlands provide essential habitat for neotropical migratory birds crossing the California deserts to reach nesting sites in the Pacific Coast states and Alaska.

BLM special status or sensitive species found in the National Conservation Lands in this alternative include desert bighorn sheep, mountain lion ("Yuma puma"), seven species of bats, Colorado Valley woodrat, wintering mountain plover, several rare raptor and owl species, seven other bird species, six reptile species, Couch's spadefoot toad, and 32 special status plant species. Rare plant species include chaparral sand-verbena (*Abronia villosa* var. *aurita*), Emory's crucifixion thorn (*Castela emoryi*), Harwood's eriastrum (*Eriastrum harwoodii*), and Munz's cholla (*Cylindropuntia munzii*).

Also included in National Conservation Lands is the Chuckwalla ACEC. The Chuckwalla Bench, a scenic plateau within the ACEC, consists of bajadas, sandy washes and desert pavement located between the Chuckwalla Mountains and the Chocolate Mountains Aerial Gunnery Range. This area is one of the best examples in California of diverse Sonoran Desert plant communities that include creosote, ocotillo, and nine species of cacti. The Chuckwalla ACEC is also critical habitat for the desert tortoise.

Wetlands along the Colorado River (adjacent to the subarea) and ephemerally flowing riparian areas at Corn Springs and Milpitas Wash are important habitats for many BLM special status species, such as Gila Woodpecker and Lucy's Warbler, and provide essential stopover habitat for migratory birds.

The Lower Colorado River corridor has the highest biological diversity of bat species in the western United States. Natural caves and abandoned mine sites located in and near the Little Picacho, Palo Verde, Picacho Peak, and Riverside Mountains Wildernesses provide vital habitat for rare bat species of management concern, including California leaf-nosed bat and pallid bat. All of these species have habitat encompassed by National Conservation Lands under this alternative.

This alternative includes some of the dune habitats at Palen Lake and the southernmost extremes of Pinto Wash system, which provide habitat for Mojave fringe-toed lizard and for additional rare plants dependent on dunes and sandy soils: Harwood's milk-vetch and Palmer's jackass clover.

Cultural Values

Important prehistoric and traditional cultural sites are abundant in this subarea, and National Conservation Lands in this alternative would include well-known sites such as Alligator Rock, Corn Springs, Mule Mountains, and the Indian Pass Area of Traditional Cultural Concern. The Quechan, Mojave, Paiute, and many other Indian tribes and groups have lived in this area for thousands of years. Most landscapes found in these National Conservation Lands have special cultural significance to these people. Tangible evidence includes ancient trails, geoglyphs, rock art, occupation and village sites and burial sites. Several sites located within these National Conservation Lands are listed or nominated for

the National Register of Historic Places, including Corn Springs and Mule Mountains. Hundreds of other sites that have not yet been recorded are likely to be found throughout the National Conservation Lands.

Alligator Rock, Corn Springs, Mule Mountains, and Indian Pass all include rock art sites, and have high cultural significance. Corn Spring was a prehistoric occupation site, and the other three are particularly known for their ancient trails and for their spiritual values. Mule Mountains also has unusual historic features associated with the World War II Desert Training Center.

The Historic Bradshaw Trail, traversing this alternative's National Conservation Lands, was established to link the Arizona gold mine camps at La Paz (Ehrenberg) with Los Angeles in the 1860s. Stage stations were set up along the route. Beginning at Dos Palmas in Riverside County, near the Salton Sea, the trail crossed Chuckwalla Valley en route to Bradshaw's Ferry on the Colorado River and on to La Paz. Today, a remnant 65-mile section of the Bradshaw Trail extends from North Shore to Palo Verde near Blythe, California. This historic trail offers spectacular views of the Chuckwalla Bench, Orocopia Mountains, Chuckwalla Mountains, and the Palo Verde Valley, and is a remnant of a formative period in the history of the desert Southwest. The BLM designated the route as a National Back Country Byway in 1992.

Most of the subarea was part of the World War II Desert Training Center, also known as the California-Arizona Maneuver Area. From 1942 to 1944, the deserts of Southern California and Arizona became a center for the largest military combat training exercise of its time. Close to a million American soldiers cycled through a series of twelve primitive base camps —collectively known as Patton Camps—from which they conducted large-scale military maneuvers. Remnants of many of the camps, including Iron Mountain Divisional Camp, Granite Divisional Camp, Camp Clipper, Camp Coxcomb, Camp Young Divisional Camp, and Rice Army Airfield, are encompassed by National Conservation Lands in this alternative. Artifacts from camp activities include rock alignments marking camp roads and walkways, rock designs of insignias and symbols, and remnants of communication wire, batteries and other items. Of particular interest are the topographic relief map and outdoor chapel at the Iron Mountain Divisional Camp.

Outstanding scenic values are also among the cultural values represented by National Conservation Lands in this alternative. These are particularly recognized at McCoy Valley and northern Palen Valley.

Scientific Values

The desert tortoise and other threatened, endangered and endemic species, Unusual Plant Assemblages, complex hydrology, and prehistoric and historic resources are the focus of numerous scientific studies on National Conservation Lands in this alternative.

Largely due to the floristic richness of the National Conservation Lands in this alternative and their importance for the recovery and conservation of Agassiz's desert tortoise, ecological research values are high. Ongoing studies of desert tortoise in the Chuckwalla Bench and desert bighorn sheep in the Chuckwalla and Little Chuckwalla Mountains Wildernesses are providing important scientific information. Other special status plants and animals offer research opportunities and would provide a wealth of knowledge on the health of populations of these species, their habitats, and landscape-scale ecosystems upon which they depend.

The Chuckwalla Bench is also the site of many botanical studies, because its flora, with 158 native species, is one of the richest in the Colorado Desert subarea. The Chuckwalla Bench area encompasses nearly all the Chuckwalla-Milpitas Wash watershed, which has the largest extant microphyll woodland in the U.S. portion of the Sonoran Desert.

The BLM-managed Wilderness Areas from Little Picacho to the Chuckwalla Mountains and north to the Palen-McCoy Wilderness form a contiguous landscape traversed by a few paved roads and OHV routes. Landscape continuity encompassed by the National Conservation Lands in this alternative provides an important setting for documenting the impacts, habitat shifts, and changes to biological diversity occasioned by climate change.

Studies of groundwater and climate change are needed to guide future management of important plant and animal habitats on National Conservation Lands in this alternative. Changes to hydrology due to changes in climate and weather pattern may alter, positively or negatively, the water cycle in the watershed. Already a focus of long-term research for desert tortoise conservation and recovery, this watershed deserves closer study to inform scientists and managers of new ways to manage desert water supplies under changing climate conditions.

The National Conservation Lands in this alternative have very high seismic activity due to the proximity of two tectonic plates, so studies of earthquakes and earth movement are also critical.

Archaeological and cultural research examines the adaptation of humans in this arid environment, and contributes to better understanding of diverse cultures. The abundant and significant cultural resources encompassed by National Conservation Lands in this

alternative include archaeological sites with important information values that could contribute to our understanding and knowledge of the past.

Acreage

This alternative would include approximately 768,000 acres of National Conservation Lands in the Colorado Desert subarea in the Preferred Alternative.

Kingston-Amargosa

Background Information

The Kingston-Amargosa subarea is marked by permanent flowing water and wetlands within one of the driest desert areas on the continent. It includes a broad range of habitat types supporting diverse plant and wildlife species including many special status species; and several narrowly endemic species, some of which may be new to science. Public lands provide critical habitat connections between a number of designated BLM Wilderness Areas such as the Kingston Range, Nopah Range and Funeral Mountains, as well as Death Valley National Park and the Mojave National Preserve.

The subarea includes some of the most intact viewsheds in the California desert. preserving the historical integrity of tribally significant landscapes, and cultural landscapes associated with the Old Spanish National Historic Trail.

Nationally significant paleontological resources in the subarea include the Mountain Pass dinosaur track way, the only known occurrence of fossilized Mesozoic reptile tracks in California and a rare occurrence in the United States. Mountain Pass was designated for protection by Congress and is included in National Conservation Lands under all alternatives.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan. All or portions of the following Wilderness Areas are within the subarea: Kingston Range, Nopah Range, Resting Spring Range, Funeral Mountains, Mesquite, Stateline, North Mesquite, Pahrump Valley, Ibex and South Nopah Range Wilderness. Other National Conservation Lands include the foreground viewshed of the Old Spanish National Historic Trail and the Amargosa Wild and Scenic River.

These areas are not managed by the BLM and are not part of the plan alternatives but contribute to the habitat conservation goals of the DRECP: Death Valley National Park and the Mojave National Preserve.

Alternative Description

Ecological Values

This alternative would include as National Conservation Lands the most important wildlife linkages and critical habitat in the subarea, and other lands with ecological sensitivity and natural integrity. These include critical linkages between Wilderness Areas and National Park units and intact landscapes between these large conservation areas. The linkages for wildlife migration are critical to the conservation of species in the East Mojave region, based on their geologic and topographic variability. The migration linkages support both biodiversity and opportunities for adaptation to climate change. Linkages are particularly important for sustaining the genetic integrity for the federally listed Threatened desert tortoise in the southern portion and a significant amount of suitable, intact habitat for desert bighorn sheep, a BLM Sensitive species, especially in the Shadow Valley and Silurian Valley areas.

Ground and surface water from the surrounding mountains flow into the Amargosa Wild and Scenic River, which supports the endemic Amargosa pupfish and Amargosa Canyon speckled dace, as well as endemic species of spring snails. Known as the "Jewel of the Mojave," the Amargosa drains into Badwater in Death Valley, the lowest point in the Western Hemisphere, and supports habitat for the Death Valley pupfish. The Amargosa River corridor boasts riparian communities that include riparian gallaries of mesquite bosque and cottonwood; and an exceptionally rich bird life including Western Least Bitterns, Northern Harriers and Snowy Plovers, leading to its national recognition as an Important Bird Area. This area is home to the only population of the federally listed Endangered Amargosa vole; the vole's entire range is included in this alternative's National Conservation Lands

This alternative would also include the northern segment of the Amargosa River and its populations of the federally listed Endangered Amargosa niterwort in National Conservation Lands.

The Shoshone Caves, near the town of Shoshone, support a unique assemblage of endemic invertebrates. The caves are included in National Conservation Lands under all alternatives.

Cultural Values

This alternative would include a diversity of nationally significant archaeological and historic sites within National Conservation Lands. Evidence of the earliest inhabitants includes rock art sites, a prehistoric turquoise mine, flakestone quarries, prehistoric and historic trail systems, rock alignments, sleeping rings and other sites that are associated

with successful long-term human occupation of one of the harshest environments in the United States. Sites in the Shadow Valley and Silurian Valley areas are of particular importance. Historic mining areas in both valleys are also included.

Scientific Values

Unique habitat, endemic species and complex hydrology offer many opportunities for scientific research on the National Conservation Lands in this alternative. The endemic Amargosa vole is the subject of long-term demographic, disease and genetics research and offers scientists a unique opportunity to study a relict species from wetter climate periods. The area is currently the focus of validation studies to describe new species including a number of new insects in the Shoshone Caves, as well as the Shoshone whip-scorpion that has not been confirmed for the last 30 years. Other potential species new to science include endemic spring snails in seeps and springs. These lands are also the focus of long-term studies examining the success of habitat restoration for songbirds, including the federally listed Bell's vireo and southwestern willow flycatcher.

Acreage

This alternative would include approximately 433,000 acres of National Conservation Lands in the Kingston-Amargosa subarea in the Preferred Alternative.

Lake Cahuilla

Background Information

The Lake Cahuilla subarea includes a picturesque mix of scenic physical features surrounding the Imperial Valley. This valley, which is the site of ancient Lake Cahuilla and now includes the Salton Sea, is one of the lowest on Earth. Sonoran Desert habitats share the valley with agricultural, urban and other private lands that are mostly below sea level and bounded by canals that divert Colorado River water from the All-American Canal along the US-Mexico border. Forty feet above sea level is the ancient Lake Cahuilla shoreline, which marks the transition to the natural landforms and landscapes of the valley. The public lands surrounding the basin are characterized by rugged desert mountains, visible remnant shorelines of ancient Lake Cahuilla, and the Coyote Mountains and Yuha Desert with their eroded mudhills and extensive marine fossil deposits.

Low elevation sand hills are habitat for the flat-tailed horned lizard, a BLM sensitive species with an active conservation plan. From the southeastern edge of the ancient lakeshore the rolling sand hills increase in elevation through the East Mesa, culminating in the high Imperial Sand Dunes, also known as the Algodones Dunes. Yet further to the east

are the rugged peaks of the Cargo Muchacho and Chocolate Mountains, and the Little Picacho, Picacho Peak, and Indian Pass Wilderness Areas, of the Colorado Desert subarea.

The western side of the Imperial Valley is dominated by the Peninsular Mountain Ranges rising steeply from the desert and providing habitat (including designated critical habitat) for the federally listed Endangered Peninsular bighorn sheep.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan. This subarea includes the following Wilderness: Fish Creek Mountains, Coyote Mountains, Jacumba, North Algodones Dunes, Little Picacho (small portion), Picacho (small portion); and the Juan Bautista de Anza National Historic Trail.

These areas are not managed by the BLM and are not part of the plan alternatives but contribute to the habitat conservation goals of the DRECP: Sonny Bono/Salton Sea National Wildlife Refuge; Imperial State Wildlife Area; Anza-Borrego Desert State Park, including State Wilderness; and the Salton Sea State Recreation Area.

Alternative Description

Ecological Values

The Lake Cahuilla subarea is characterized by extremes in elevation, rainfall, and land uses. The Imperial Valley is also the boundary between two tectonic plates, causing a jumble of diverse geology and soils, which results in a very high level of endemic and rare species and habitats. Three Unusual Plant Assemblages would be included in the National Conservation Lands under this alternative: Mesquite Thickets, Yuha Desert Crucifixion Thorn, and Munz Cholla.

San Sebastian Marsh and San Felipe Creek, included in the National Conservation Lands in this alternative, represent rare occurrences of marsh and perennial stream habitat in a desert environment. The area is designated as an Unusual Plant Assemblage under Mesquite Thickets and other plant assemblages associated with water. The marsh and creek are the only designated critical habitat for the federally listed Endangered desert pupfish in California. The lowland leopard frog may also still occur in San Felipe Creek, which includes a proposed reintroduction site at its only known former breeding location. The flat-tailed horned lizard also occurs here. National Conservation Lands in this alternative would link the existing ACEC to existing and proposed conservation lands and ACECs to the south and west, including the Fish Creek Mountains Wilderness, Anza-Borrego Desert State Park, and West Mesa ACEC.

The West Mesa conservation lands are contiguous with San Sebastian Marsh/San Felipe Creek. The West Mesa is a transition between the Imperial Valley floor and the Peninsular Ranges. The area is habitat for the flat-tailed horned lizard, a BLM and California special status species and a covered species under the Lower Colorado River Multi-Species Conservation Program (LCRMSCP). National Conservation Lands in this alternative would include the lands identified for recovery of the species within the LCRMSCP, and encompass landscape-level habitat values by connecting to the Fish Creek Mountains Wilderness and Anza-Borrego Desert State Park. West Mesa also supports Colorado Desert fringe-toed lizard and bighorn sheep.

Habitat for the flat-tailed horned lizard and other sensitive species is also found in this alternative's National Conservation Lands in the Yuha Desert, along with important plant communities including Yuha Desert Crucifixion Thorn Unusual Plant Assemblage; and the Ocotillo ACEC, together with rare California fan palms and an important corridor for Peninsular bighorn sheep linking the Yuha Basin, Jacumba Wilderness and Anza-Borrego Desert State Park.

Under this alternative, National Conservation Lands on the east side of the Imperial Valley would cover the Chocolate and Cargo Muchacho mountains; the low sand hills of the East Mesa bordering the Imperial Sand Dunes; and the best examples of the Lake Cahuilla shoreline. Lake Cahuilla shoreline lands on both the west and east sides of the valley include widely distributed flat-tailed horned lizard habitat. The East Mesa area, strategically essential to the LCRMSCP, has the largest contiguous area of the flat-tailed horned lizard's range with the highest relative abundance of flat-tailed horned lizard not undergoing significant surface disturbance. The East Mesa Expansion National Conservation Lands would link the existing East Mesa ACEC with the remainder of the LCRMSCP essential habitat to the north. An additional block of land separated from the larger unit by Interstate 8 and the All American Canal would also be included as National Conservation Lands.

Bordering the Imperial Sand Dunes on the east are proposed National Conservation Lands that would be part of a large contiguous unit creating an unbroken arc of specially designated landscapes from the lower Colorado River to Joshua Tree National Park and the Mojave Desert. These would include intact wildlife corridors extending well beyond this subarea, stretching from the Sonoran Desert to the highest elevations of the Little San Bernardino Mountains and beyond. Important habitat types encompassed include microphyll woodlands, hotspots of biodiversity in the desert, and habitat for special status or BLM sensitive species: Agassiz's desert tortoise, desert bighorn sheep, mountain lion ("Yuma puma"), seven species of bats, Colorado Valley woodrat, Mountain Plover, several raptor and owl species, seven other bird species, six reptile species, Couch's spadefoot toad, and 32 special status plant species. Natural communities include Sonoran Desert scrub,

Mojave Desert scrub, desert dry wash woodland, playas, sand dunes, and desert washes. Desert pavement and biological soil crusts are important soil resources.

Cultural Values

The Lake Cahuilla subarea is culturally important in California history and to Native American tribes of the region. Because the ancient lake once filled the valley, widely distributed parcels of National Conservation Lands in this alternative include segments of the ancient Lake Cahuilla lakeshore on both the west and east sides of the valley, with extensive cultural resources from thousands of years of human occupation. In addition to shoreline occupation sites and traditional uses, these areas includes trails, rock art, ceremonial sites and burials. The Kumeyaay, Quechan, Mojave, Paiute, and many other far ranging Indian tribes and groups have lived in the region for generations and most of the landscapes found in this subarea have special cultural significance to these peoples. The National Conservation Lands in this alternative encompass several sites that are listed in, nominated for listing, or eligible for listing in the National Register of Historic Places, including San Sebastian Marsh, most of Yuha Basin, Singer Geoglyphs, Pilot Knob, and others such as the Ocotillo area where sites ranging from ancient to recent are set in a spectacularly scenic ethnographic landscape of traditional significance to many local tribes. While these sites have been identified, are designated as ACECs and receive public visitation, hundreds or even thousands of unknown sites are likely located throughout the unit.

Many important events in European and American history occurred in this subarea. The Juan Bautista de Anza National Historic Trail commemorates the epic expedition of the 1770s that helped colonize Upper California; the unaltered landscapes of the trail route are among the last in California that give visitors a sense of the colonists' accomplishment. The National Conservation Lands in this alternative include segments of the trail at San Sebastian Marsh, Yuha Basin, and connecting Fish Springs to Anza-Borrego Desert State Park, along with well-known camp sites of the Anza expedition at San Sebastian Marsh and Yuha Well.

In the Yuha Basin, this alternative also includes portions of the Southern Immigrant Trail/Butterfield Overland Stage Route, which was the main road into California during the mid-19th century. Thousands of soldiers, traders, settlers, and gold seekers crossed the southwest on this trail, particularly during the California Gold Rush. Many sections of the original trail and much of the historic landscape still exist and the route is being studied by the National Park Service for potential designation as a National Historic Trail. If the National Park Service study recommends the trail as "suitable" for congressional designation as a National Historic Trail, Congress may act a second time to designate the

trail. If designated by Congress, the National Trails System Act Section 5(a) is amended, adding the trail as a component of the National Trails System.

Also included in this alternative as National Conservation Lands are the gold mines and ghost town of Tumco in the Cargo Muchacho Mountains, representing the early 20th century mining history of the United States. Tumco is a popular visitor destination with many photogenic ruins. The entire subarea was also part of the World War II Desert Training Center, although most vestiges of the training camps have been vandalized or removed; none of the training camps are included in this alternative.

Scientific Values

Due to the importance of this area for the recovery and conservation of so many species, ecological research values are high. Because of the extensive habitat linkage, National Conservation Lands in this alternative offer unparalleled opportunities to study wildlife movement and connections between diverse habitats. Ongoing studies of desert tortoise, bighorn sheep, and other special status plants and animals provide a wealth of knowledge on the health of these species, habitats, and ecosystems.

Studies of groundwater and climate change affecting conservation lands are needed to help guide future management. The area has very high seismic activity due to the proximity of two tectonic plates, so studies of earthquake and earth movements are critical.

Archaeological and cultural research about the adaptation of humans in this arid environment contributes to better understanding of diverse cultures. Since the area is rich in cultural resources, National Conservation Lands proposed in this alternative include lands that are important to cooperative study, management and preservation of these resources by the BLM and Native American tribes. Many of the prehistoric archaeological sites have been listed, nominated, or are eligible for listing in the National Register of Historic Places due to their scientific research values and potential.

National Conservation Lands in this alternative also offer opportunities for paleontological research. The Yuha Basin, well known for fossil deposits, is composed of eroded badlands with portions of the Imperial Formation exposing ancient oyster shell beds and other marine fossils.

The cultural and paleontological resources discovered and studied within this unit are often associated with nationally known scientists, such as archaeologist Malcolm Rogers, and institutions including the San Diego Natural History Museum and the San Diego Museum of Man.

Acreage

This alternative would include approximately 428,000 acres of National Conservation Lands in the Lake Cahuilla subarea in the Preferred Alternative.

Mojave and Silurian Valley

Background Information

The Mojave and Silurian Valley subarea lies within the east and central Mojave Desert, with Barstow just outside its southwest corner; from there it extends beyond Soda Lake in the east and the Salt Creek Hills to the northeast. It includes the alluvial plain of the Silurian Valley, from where the Amargosa River drains it on the north, south to the South Avawatz Mountains. Water and wind erosion, and the subsequent deposition of sediments across the landscape, strongly shape the major landforms: very gently to moderately sloping alluvial fans and nearly level basin floors, with a few protruding hills. The broad valley floors have areas of sand dunes, some steeply sloping; and dry lake beds, with large playas at Soda Lake, Silver Lake, and Silurian Lake. Scattered, isolated mountain blocks are mostly less than 1,000 feet in elevation but range to over 5,250 feet.

Springs and perennial water sources are uncommon. Mean annual precipitation is about 4 to 6 inches, nearly all falling as rain during the cool winter months. Summer temperatures often exceed 100°F. The timing of spring plant growth varies with temperatures and the quantity and intensity of precipitation, bringing a wide variety of annual wildflowers in good rainfall years. The most widespread vegetation community is creosote bush scrub. Other common plant communities include saltbush on basin floors, iodine bush and saltgrass on wet basin-fill and lacustrine deposits, and desert sand-verbena on stabilized dunes.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan. All or portions of the following are within the subarea: Black Mountains, Golden Valley, Grass Valley, Hollow Hills, Kingston Range, Newberry Mountains and Rodman Mountain Wildernesses; and Avawatz Mountains, Cady Mountains, Soda Mountains, and South Avawatz Mountains Wilderness Study Areas.

The Mojave National Preserve is not managed by the BLM and is not part of the Plan alternatives, but contributes to the habitat conservation goals of the DRECP.

Alternative Description

Ecological Values

National Conservation Lands in this alternative include critical habitat for Agassiz's desert tortoise in six dispersed parts of the Superior-Cronese ACEC. The public lands that surround the Black Mountain Wilderness and lie within the Superior-Cronese ACEC have critical habitat for desert tortoise, a federally listed Threatened species; and known habitat for Mohave ground squirrel, LeConte's thrasher, and Barstow woolly sunflower. The Superior-Cronese area includes the largest of only eight known population of Parish's phacelia, most of which have not been located since pre-1980. These lands are foraging habitat for golden eagles and prairie falcons nesting nearby. Parts of the adjacent Fremont-Cramer ACEC that lie within this subarea have the same ecological values and are also included.

Desert tortoise habitat at the north end of the Ord-Rodman ACEC is also included in this alternative's National Conservation Lands, along with important habitat for the Mojave monkeyflower.

The National Conservation Lands of Coolgardie Mesa encompass populations of the narrow endemic Lane Mountain milk-vetch, a federally listed Endangered species, and Barstow woolly sunflower. The area is surrounded by the Superior-Cronese ACEC and lies approximately nine miles north of Barstow, adjacent to Rainbow Basin and Owl Canyon which are also included. Coolgardie Mesa also has key habitats for Mohave ground squirrel and burrowing owl.

Mojave fringe-toed lizard habitats at the delta of the Mojave River, the Silurian Valley, and a part of Coyote Lake are part of the National Conservation Lands in this alternative. Also included are populations of Parish's phacelia in the vicinity of Coyote Lake.

Along with Mojave fringe-toed lizard habitat, the National Conservation Lands in the Silurian Valley also provide nesting habitat for golden eagles, have been recognized as important migration habitat for several sensitive species of bats, and are crossed by important migration corridors for bighorn sheep.

In Afton Canyon the Mojave River flows aboveground year-round and supports riparian woodlands with an unusual riparian plant community. It hosts many rare bird species, and the canyon cliffs are home to nesting raptors. The Salt Creek Hills area is also included as National Conservation Lands because of extensive riparian habitat, important for birds; and BLM Sensitive plant species. National Conservation Lands would encompass the Salt Creek ACEC, where riparian vegetation constitutes a rare habitat within the Mojave Desert and an important source of food, shelter, and nesting space for birds.

National Conservation Lands in this alternative will encompass large landscapes and provide habitat connectivity for terrestrial dwelling reptiles, mammals and Burrowing Owls. Important areas of habitat connectivity are between Rodman Mountains Wilderness and the Cady Mountains Wilderness Study Area (outside the subarea); between the Mojave National Preserve and Death Valley National Park through the west side of Hollow Hills Wilderness, the west side of the Kingston Range Wilderness, and the Avawatz Mountains Wilderness Study Area; and the Pilot Knob area connecting Golden Valley Wilderness and Grass Valley Wilderness.

Cultural Values

Important prehistoric and traditional cultural sites are abundant in this subarea. National Conservation Lands in this alternative would include well-known sites such as Afton Canyon, Inscription Canyon, Christmas Canyon and Calico Early Man site.

Humans in the Afton Canyon area left a record in the form of stone tools and pottery, some of it estimated to be over 8,000 years old. The first European to document a visit to Afton Canyon was Father Francisco Garces, a Spanish missionary, who came through in 1776 and called the area Painted Pass.

National Conservation Lands would include an area surrounding the Black Mountain Wilderness, including Inscription Canyon, that was listed in 2000 on the National Register of Historic Places as the Black Mountain Rock Art District. Extraordinary cultural resources include extensive assemblages of petroglyphs, significant to the religious and spiritual concerns of Native Americans; along with lithic workshops, locations suitable for surface occupation sites and game hunting, and a major transportation corridor used by prehistoric people. Part of the Black Mountain Rock Art District is within the designated Wilderness; this alternative would expand on the area of the Rock Art District that would be included in National Conservation Lands, adding Inscription Canyon, more petroglyph sites, and additional examples of all of the cultural values described.

Also among prehistoric sites listed on the National Register of Historic Places is the Calico Early Man Site, where amateur archaeologists first discovered what appeared to be primitive stone tools in 1942. Since then it has been intensively studied by scientists including famed archaeologist-paleontologist Dr. Louis Leakey, and classified as a stone tool workshop, quarry and camp site. Scientific controversy surrounds the issue of whether thousands of rocks closely resembling prehistoric tools – both on the surface and as deep as 26 feet below the surface – were actually shaped by humans or by geologic forces, because the excavated subsurface objects are many times older than currently well-accepted dates for the first human entry into the Americas. This site is part of the National Conservation Lands in this alternative.

The existing Christmas Canyon ACEC is included as National Conservation Lands in all alternatives. The ACEC was designated to protect archaeological resources associated with prehistoric reduction of lithic resources, particularly at a large chert quarry, and prehistoric and early historic sites associated with the collection and processing of edible plants. Approximately 72 cultural resource properties have been identified within the Canyon.

The Mojave Road or Mojave Trail is a historic route and present day dirt road across the Mojave Desert. The route, linking watering holes between the Colorado River and San Bernardino, was used by Native Americans and later served Spanish missionaries, explorers, foreign colonizers and settlers from the 18th to 19th centuries. Today, this rough road stretches 140 miles from the site of the old Fort Mohave (on the west bank of the Colorado River, roughly 10 miles southwest of Bullhead City, Arizona) to the site of the old Camp Cady (on the west bank of the Mojave River, roughly 12 miles northeast of Newberry Springs, California). A segment located in the subarea and passing through Afton Canyon would be included in National Conservation Lands.

The Old Spanish Trail was a historic trade route which connected the settlements near Santa Fe, New Mexico with those of Los Angeles and Southern California. The segment of the trail across the Mojave Desert was considered one of the most arduous and difficult for pioneers to navigate. The Trail saw extensive use by pack trains from about 1830 until the mid-1850s. Part of this trail passes through the Manix ACEC and Afton Canyon areas, both of which would become part of the National Conservation Lands, along with the Salt Creek area. Salt Creek is along the Old Spanish Trail route, and the creek itself is described in several historic travel accounts. Salt Creek was along the Mormon Trail, which is important to the western expansion of the United States, and was the first known Mormon mining operation in California. The mining district and other Salt Creek sites meet the criteria for inclusion in the National Register of Historic Places.

The newly proposed Silurian Valley ACEC and Silurian Valley Corridor would be included as National Conservation Lands under this alternative, with many culturally significant prehistoric and historic features. Three prehistoric sites recently recorded within the Silurian Valley appear to be Paleoindian sites possibly dating as far back as 12,000 years. Sites of this age are rare in the Americas. Representing the period of transition between the Pleistocene and Holocene periods, the sites may contribute to a better understanding of how humans have adapted to climate change in the past. These sites meet criteria for eligibility to the National Register of Historic Places.

The Silurian Valley is within the congressionally designated Old Spanish Trail corridor. Through the years, the Silurian Valley has seen little development and the historic landscape dating back to the Old Spanish Trail period is largely intact, with the exception of

the construction and paving of State Highway 127, which for the most part follows the course of the Old Spanish Trail/Mormon Road/Salt Lake Road/Santa Fe Trail. This area has been identified as having an exceptional recreational value for a driving experience to view the landscape as it was during the period of trail usage. The historic setting meets criteria for inclusion in the National Register of Historic Places.

The Tonopah and Tidewater Railroad (T&T) served as an important transportation link between the isolated mining communities of the Mojave Desert for 35 years. It originally stretched for 200 miles through remote reaches of the Mojave Desert to transport borax to market and link to the Nevada gold fields; portions are now used as a hiking trail. The nine-mile segment of the rail line that passes through the Silurian Valley conveys the difficult nature of early railroad development in the desert southwest during the historic period. This segment exhibits structural elements not seen along any of the other recorded segments of the rail line to date, including culverts, platforms, furrows, and other associated features, and meets eligibility criteria for the National Register of Historic Places.

The T&T Railroad played an important role in western expansion of the United States, making it possible for large-scale mining and settlement in the Death Valley region. The town site of Riggs, with associated mining features, is within the Silurian Valley and meets eligibility criteria for the National Register of Historic Places. Because of the association of the T&T with the local mining in the area and the town site of Riggs, and associated mining, these collectively meet criteria for eligibility as a National Register of Historic Places district.

The LADWP Boulder Transmission Line which crosses the Silurian Valley was built in 1933 to service construction of Hoover Dam and transport power to Los Angeles, and is listed on the National Register of Historic Places.

Scientific Values

Scientific values associated with all of the ecological and cultural values described above are high, offering valuable research opportunities. Unique habitats, rare endemic plant and animal species, and the Mojave River at Afton Canyon are the focus of many ecological studies on National Conservation Lands in this alternative.

The Calico Early Man Site has been extensively studied for over 70 years, providing important information to contribute to our knowledge and understanding of the past.

Paleontological research is also underway. Ongoing studies of rock formations and fossil beds at Rainbow Basin and the Manix area have provided scientists with valuable

information about life during the middle Miocene epoch, between 12 and 16 million years ago.

Acreage

This alternative would include approximately 271,000 acres of National Conservation Lands in the Mojave and Silurian Valley subarea in the Preferred Alternative.

Pinto, Lucerne Valley, and Eastern Slopes

Background Information

Lands of this subarea span diverse landscapes of the south-central Mojave Desert and the San Bernardino Mountains, from 1,000 feet to over 6,000 feet in elevation. The subarea includes most of Joshua Tree National Park, the north and east facing slopes of the San Bernardino Mountains, and desert ranges of the southern Mojave Desert.

The subareas's central portion includes the vast Twentynine Palms Marine Corps Air Ground Combat Center and the growing communities of the Morongo Basin and Lucerne Valley. These are essentially surrounded by public lands that are important to maintaining a variety of sensitive natural resources.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan: Wilderness – Pinto Mountains, San Gorgonio, Bighorn Mountains, Cleghorn Lakes (portion), Rodman Mountains, Newberry Mountains; and National Trails System – Pacific Crest National Scenic Trail.

Joshua Tree National Park is managed by the NPS and is not part of the plan alternatives, but contributes to the habitat conservation goals of the DRECP.

Alternative Description

Ecological Values

National Conservation Lands proposed in this alternative are grouped into three clusters, in the northeast, west central, and west parts of the subarea. Each cluster would weave together some of the most diverse and threatened habitats in the California desert. This diversity is represented in a national park, 10 ACECs, and two Unusual Plant Assemblages: Pipes Canyon Huge Joshua Trees and Ord Mountain Jojoba Assemblage.

National Conservation Lands in the northeast part of the subarea connect the Newberry and Rodman Mountains Wilderness Areas with the Ord Mountains complex which supports a high concentration of breeding sites for golden eagles and prairie falcons. These lands

also encompass areas important for wildlife habitat connectivity between these Wilderness Areas, and important habitat for Agassiz's desert tortoise, Mojave monkeyflower, and other sensitive species.

The west central part of the subarea is the transitional landscape between the San Bernardino Mountains and the Mojave Desert and sits on the edge of the urban interface with the Los Angeles metropolitan area. This alternative's National Conservation Lands in the Bighorn Mountains and Pipes Canyon areas form a wildlife connectivity corridor between Johnson Valley and Twentynine Palms, within the Plan Area, and National Forest lands outside the Plan Area.

National Conservation Lands in this alternative also include Juniper Flats, with habitat for the coast horned lizard and the gray vireo, both BLM Sensitive; and the Carbonate Endemic Plant Research Natural Area ACEC, which supports an unusual geologic, soil, and plant association and contains habitat for threatened and endangered species.

In the southeastern part of the subarea, National Conservation Lands in this alternative provide habitat for the Mojave fringe-toed lizard, Agassiz's desert tortoise, and other sensitive species in a region increasingly fragmented by development, private lands, and military uses. This includes the lands known as the "saddle" of Joshua Tree National Park, or the Pinto Mountains, which have high biological and cultural values and are proposed as additions to the National Park.

Cultural Values

As a region of transition between desert and coast, this subarea has a rich human history from prehistoric times to recent events, encompassing significant cultural resources. National Conservation Lands in this alternative encompass important remnants of Native American habitation, trails, and spiritual sites.

The Pipes Canyon area has numerous prehistoric resources that would meet criteria for inclusion to the National Register of Historic Places as contributing elements of an Eligible District; and has the greatest concentration of known National Register eligible sites within the area administered by BLM's Barstow Field Office. The Juniper Flats Cultural Area encompasses numerous rock shelters and village sites that meet the criteria for National Register of Historic Places listing; and, being located in a transition area between the mountains and Mojave Desert, can contribute to understanding local peoples' migration patterns. The Bighorn Mountains Wilderness, Juniper Flats ACEC, and surrounding public lands also have special significance to modern local residents for their scenic and historic values.

Late 19th and early 20th century mining and ranching facilities are found throughout the subarea, particularly the Dale Mining District in the Joshua Tree National Park "saddle." The historic WWII Desert Training Center boundary overlaps this subarea on the east, and vestiges of the DTC would be included in the National Conservation Lands.

Scientific Values

National Conservation Lands in this alternative have significant scientific value, given the diverse landscapes which link the San Bernardino Mountains with the Mojave Desert and Joshua Tree National Park. Unique soils, extremes in elevation, ancient plant clones, widespread cultural resources, and the proximity to urban Southern California all contribute to this area being a world class natural laboratory. The area is already the focus of numerous research projects and most regional universities use the proposed National Conservation Lands for teaching and study.

Acreage

This alternative would include approximately 296,000 acres of National Conservation Lands in the Pinto, Lucerne Valley, and Eastern Slopes subarea in the Preferred Alternative.

Piute Valley and Sacramento Mountains

Background Information

The remote Piute Valley and Sacramento Mountains subarea spans the transition zone between the Mojave and Sonoran Deserts. With some of the most intact and scenic landscapes in the California deserts, the subarea encompasses visual extremes: many distinct rugged mountains ranges, each with its own character; large washes, steep canyons, and expansive piedmont plains. The vistas of Piute Valley provide a nearly 360-degree panorama of mountains; and the grand-scale Chemehuevi Wash system, with washes within washes, collects the flash flood waters from mountains to the west en route to the Colorado River.

Needles, the largest city in the subarea, is located in the Mohave Valley straddling the California, Arizona and Nevada borders at the southern edge of the Mojave Desert, on the western banks of the Colorado River. Communities just outside the subarea include Bullhead City, Lake Havasu City, and Parker in Arizona, and Laughlin in Nevada. Las Vegas is 110 miles to the north. Interstate 40 and U.S. Highway 95 are the conduits for bringing visitors to the subarea.

Six BLM Wilderness Areas, overlapping with six ACECs, are currently part of the subarea. The Chemehuevi Mountains National Conservation Lands link the subarea's wildernesses to other BLM wildernesses west of the Sacramento Mountains and to the Mojave National

Preserve. A Congressionally protected wild burro population frequents the Chemehuevi Wash region, favoring the BLM public lands closest to the Colorado River.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan. All or portions of the following Wilderness Areas are within the subarea: Bigelow Cholla Garden, Chemehuevi Mountains, Dead Mountains, Stepladder Mountains, Turtle Mountains, and Whipple Mountains Wilderness Areas.

These areas are not managed by the BLM and are not part of the plan alternatives but contribute to the habitat conservation goals of the DRECP: Mojave National Preserve and Havasu National Wildlife Refuge.

Alternative Description

Ecological Values

This alternative includes National Conservation Lands around and connecting all six Wilderness Areas. The Piute Valley provides important habitat connectivity between the Dead Mountains Wilderness and the Piute Range in the Mojave National Preserve to the west; and the Newberry Mountains in Nevada to the northeast.

National Conservation Lands include the watershed draining through Chemehuevi Wash to the Colorado River, except for the lower Wash as it narrows toward the Colorado River between the Chemehuevi Mountains and Whipple Mountains Wilderness; and lands in the Homer Wash, a large Mojave Desert wash system in Ward Valley running from the westernmost point of the Bigelow Cholla Garden Wilderness south to the west side of the Stepladder Mountains Wilderness.

The Whipple Mountains are particularly important for their vegetation. Recent botanical studies have uncovered species previously unknown in California but typical of the Upper Sonoran Zone further east across the Colorado River in Arizona.

In the Mojave Desert zone of this subarea, the Bigelow Cholla Garden Wilderness is included in existing National Conservation Lands. The wilderness hosts the largest population of teddybear (Bigelow) chollas, in an Unusual Plant Assemblage. New National Conservation Lands would encompass more teddybear cholla stands in the Chemehuevi Valley and the Sacramento Mountains.

The Chemehuevi Valley provides critical habitat for desert tortoise and other Mojave and Sonoran Desert animal and plant species. Chemehuevi Wash, which drains the center of the valley, is home to the northernmost Sonoran Desert microphyll woodland in California;

massive old-growth blue palo verde trees; and a carefully documented Unusual Plant Assemblage of thriving Emory's crucifixion thorn shrubs.

Sonoran Desert microphyll woodlands in washes provide cover and food for migratory land birds traveling on the Colorado River Flyway. This alternative's National Conservation Lands in the northernmost headwaters of the Vidal Wash system and the core of Chemehuevi Wash are important microphyll woodland habitats for nesting birds, including rare species such as long-eared owl, Arizona Bell's vireo, Crissal and Bendire's thrashers, and Lucy's warbler. The woodlands provide good winter habitat for raptors, mountain bluebirds, and many sparrow species.

This alternative includes National Conservation Lands in upland areas with extensive habitat for declining species such as burrowing owl, loggerhead shrike, and American badger. Cliffs and ledges provide nesting habitat for golden eagles and prairie falcons.

Important linkages providing habitat connectivity for wildlife are included. Habitat corridors connect the major Chemehuevi and Fenner-Paiute desert tortoise population centers to other centers to the west. Desert bighorn sheep benefit from the intact landscape connectivity among large, mountainous wilderness areas included in National Conservation Lands.

Bats find maternity and hibernation habitat in abandoned mines, mainly located in existing designated Wilderness and in proposed National Conservation Lands in the Sacramento Mountains; and with food sources nearby along the Colorado River and throughout the subarea. This alternative would give National Conservation Land status to important foraging habitat for BLM Sensitive bat species: fringed myotis, Yuma myotis, California leaf-nosed bat, and the site of a pallid bat colony in the Sacramento Mountains.

Important special status plant populations would be included in National Conservation Lands in this alternative: Kofa Mountain bearberry (*Berberis harrisoniana*), glandular ditaxis (*Ditaxis claryana*), wand-like fleabane daisy (*Erigegon oxyphyllus*), Graham's fishhook cactus (*Mammalaria grahamii* var. *grahamii*), spiny-hair blazing star (*Mentzelia tricuspis*), Arizona pholistoma (*Pholistoma auritum* var. *arizonicum*), and narrow-leaved psorothamnus (*Psorothamnus fremontii* var. *attenuatus*).

<u>Cultural Values</u>

Lands draining to the Colorado River have long been important to native peoples, with numerous cultural sites significant to the Colorado River Tribes and other Native American groups. National Conservation Lands include ancient petroglyphs, pictographs, trails, and stonework sites, and bear witness to the lives of the first peoples.

Ancestors of the Fort Mojave Indian Tribe lived in the Mojave Valley area for thousands of years prior to the European exploration of the area. In the Mojave language they call themselves the "Pipa Aha Macav," meaning "people who live along the river." To the south along the river at the mouth of Chemehuevi Wash are the lands of the Chemehuevi Indian Tribe. Tribe members, Nuwu (the People), are descendants of nomadic residents of the eastern Mojave Desert mountains and canyons and the Colorado River shoreline. The southeast edge of the subarea borders the north end of the Colorado Indian Tribes reservation, where members of the Chemehuevi, Mojave, Hopi, and Navajo tribes reside. Significant cultural and historic resources proposed as National Conservation Lands in this alternative include many prehistoric and historic sites associated with, but not adjacent to, the Colorado River. These lands would encompass cultural sites, including trails, sacred sites and petroglyphs, significant to federally recognized tribes and other Native American groups.

The Sacramento Mountains have many prehistoric sites and features, most notably remnants of a northeast-southwest trending trail system that traverses the range, with associated sites and artifacts indicating seasonal and continuous usage. The trail continues to have high cultural significance, especially to the Fort Mohave Indian Tribe who have a name for the trail and still actively visit sites along it. Historic sites are also found in the Sacramento Mountains, with those in the south associated with mining; and in the north, with the World War II Desert Training Center. Sites on the west side of the Sacramento Mountains are included as National Conservation Lands under this alternative.

National Conservation Lands in this alternative include lands within the proposed Mojave Trails National Monument. The portions of the historic Mojave Road (Mojave Trail) and the Old Spanish National Historic Trail from the Nevada state line to the eastern boundary of the Mojave National Preserve would be part of the National Conservation Lands. The Mojave Trail was used prehistorically by Native Americans, and historically by explorers and pioneer immigrants.

A segment of historic U.S. Route 66, the major route from the 1920s through the 1960s for immigrants moving to California from the Midwest, is located within the subarea. This entire segment would be part of the National Conservation Lands in this alternative.

A portion of the subarea was part of the World War II Desert Training Center, also known as the California-Arizona Maneuver Area. From 1942 to 1944, the deserts of Southern California and Arizona became a combat training center for the largest military training exercise of its time. Close to a million American soldiers cycled through a series of twelve primitive base camps – collectively known as Patton Camps – from which they conducted large-scale military maneuvers. One camp in this subarea, Camp Ibis, was at its height home to several Armored Divisions, each numbering over 20,000 troops. A series of roads

and rock-outlined trails remain, along with insignia and scattered paraphernalia, wires, buttons and canteens. The largest remaining structure is a concrete reservoir to the northeast of the old Division Headquarters. Camp Ibis and its environs are part of this National Conservation Lands designated under this alternative.

Scientific Values

The Chemehuevi Wash system is about 15 miles wide where it crosses Highway 95, draining from six blocks of mountains: the Turtle Mountains in the southwest, Stepladder Mountains on the west, Sacramento Mountains on the north, Chemehuevi Mountains on the northeast, and Whipple Mountains on the southeast. Unique geological, biotic, and cultural features make the Chemehuevi Wash watershed a valued resource for multidisciplinary scientific inquiry. To the west, Homer Wash running through Ward Valley is a larger-scale Mojave Desert wash system that provides a contrast in processes between the Sonoran and Mojave Deserts.

Due to the importance of the proposed National Conservation Lands for recovery and conservation of desert tortoise, other special status animal and plant species, and unique vegetation alliances, scientific and research values are high. The continuum of intact Mojave Desert habitats encompassed by National Conservation Lands, including riparian areas, springs, Joshua tree woodlands, and big galleta shrub-steppe offers abundant research opportunities. Plant communities at the limits of their range, such as the Whipple Mountains' saguaro cactus population, are of unique value to scientists studying the ecological factors that define their extent.

The Teddybear Cholla (*Opuntia bigelovii*) Research Natural Area, included in this alternative as National Conservation Lands, supports the northernmost population of teddybear cholla in the subarea. Bisected by Interstate Highway 40, the area lies on a gently sloping Quaternary alluvial plain on the west side of the Sacramento Mountains and is an outstanding example of stands of cholla within a creosote bush scrub community. The University of California manages the adjacent Sacramento Mountains Reserve as a center for ecological research. Geologists have also worked extensively in this area.

Many archaeological and anthropological studies are being conducted by scientists from the University of California and other academic institutions. These important studies contribute to better knowledge and appreciation of how humans have adapted to the harsh desert environment.

Acreage

This alternative would include approximately 417,000 acres of National Conservation Lands in the Piute Valley and Sacramento Mountains subarea in the Preferred Alternative.

South Mojave-Amboy

Background Information

This central part of the Mojave Desert encompasses some the most iconic features of the CDCA. The Old Woman and Providence Mountains provide a dramatic backdrop to the intervening valleys and mountain ranges. The subarea includes some of the most diverse geologic features of the Mojave Desert, such as volcanic cinder cones and lava flows (Amboy and Pisgah Craters), limestone formations (Mitchell Caverns), and some of the tallest sand dunes in the nation (Kelso Dunes). The Marble Mountain Range contains one of the classic Cambrian trilobite fossil sites of the United States. The Marble Mountain Fossil Beds lie in a beautiful shale formation that is 60 feet thick and over 550 million years old. While some of these features are protected, similar geologic resources are found throughout the subarea and are vulnerable to impacts from mining and other development. A large portion of the Mojave National Preserve is located in the northern part of the subarea, and historic U.S. Route 66 extends across the entire subarea.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan: all of the Clipper Mountains, Piute Mountains and Trilobite Wildernesses; parts of the Bigelow Cholla Garden, Bristol Mountains, Cleghorn Lakes, Kelso Dunes, Old Woman Mountains and Sheephole Valley Wildernesses; and part of the Cady Mountains Wilderness Study Area.

These areas are not managed by the BLM and are not part of the plan alternatives but contribute to the habitat conservation goals of the DRECP: Joshua Tree National Park (very small part), Mojave National Preserve (part), Providence Mountains State Recreation Area/Mitchell Caverns Natural Preserve.

Alternative Description

<u>Ecological Values</u>

The subarea has some of the best-quality habitat for Agassiz's desert tortoise in the southeast Mojave Desert, with a third of the Chemehuevi ACEC within the subarea. The BLM established this ACEC as an ACEC to conserve critical Agassiz's desert tortoise habitat. National Conservation Lands in this alternative link the Ord-Rodman ACEC with the Chemehuevi ACEC across the Amboy-Cadiz Valley area. The transitional ecosystem attracts a variety of birds including sensitive species such as burrowing owl, loggerhead shrike, and Bendire's thrasher as well as desert raptors such as prairie falcon.

National Conservation Lands in this alternative also encompass specialized dune habitat for Mojave fringe-toed lizards; and roosting habitat for BLM Sensitive bat species: Townsend's big-eared bat, pallid bat, California leaf-nosed bat and Western small-footed myotis.

Many rare and sensitive plants with highly localized ranges are included in National Conservation Lands in this alternative: small-flowered androstephium (*Androstephium breviflorum*), Emory's crucifixion-thorn (*Castela emoryi*), Clokey's cryptantha (*Cryptantha clokeyi*), Arizona cymopterus (*Cymopterus multinervatus*), glandular ditaxis (*Ditaxis claryana*), Harwood's eriastrum (*Eriastrum harwoodii*), Orocopia Mountains spurge (*Euphorbia jaegeri*), knotted rush (*Juncus nodosus*), Darlington's blazing-star (*Mentzelia puberula*), Robison's monardella (*Monardella robisonii*), white-margined beardtongue (*Penstemon albomarginatus*), desert beardtongue (*P. pseudospectabilis* ssp. *pseudospectabilis*), Stephens' beardtongue (*P. stephensii*), and lobed ground-cherry (*Physalis lobata*).

Between the Clipper Mountains and the Trilobite Wilderness Areas is Bonanza Spring, one of the few natural watering areas for wildlife in the Mojave Desert. National Conservation Lands would include this reliable and critical water source for bighorn sheep and other species that traverse this vast, arid landscape.

National Conservation Lands in this alternative also include an unusual invertebrate assemblage associated with lava tubes in and around the Pisgah Crater; some species may not yet be described by science.

This alternative provides connectivity among all Wilderness Areas, and links the Mojave National Preserve to Joshua Tree National Park to the south, with National Conservation Lands.

The Castle Mountains area surrounded by the Mojave National Preserve would also be included. The Castle Mountains area is a critical linkage between the Piute Mountains and the New York Mountains. The high-quality desert habitat of the Castle Mountains ensures the long-term survival of Joshua tree woodlands and many wildlife species, including desert bighorn sheep, which use it both as habitat and as a wildlife corridor between the water-poor Piute Mountains and the wetter New York Mountains. The Castle Mountains have Utah juniper woodland at higher elevations, and a unique assemblage of 15 species of native perennial grasses occurs here.

<u>Cultural Values</u>

This subarea, including National Conservation Lands in this alternative, is particularly rich in cultural resources. Recently an important geoglyph has been discovered here, only the

second site of this specific type known; this site meets criteria for eligibility to the National Register of Historic Places. Many other culturally significant sites and landscapes are important to local and regional tribes. Outstanding Native American prehistoric resources include an obsidian source in the Castle Mountains area that provided material found throughout the Mojave Desert.

Significant trails and travel corridors used for thousands of years crisscross the area. Native American trade routes were subsequently used by Spanish, Mexican, and American explorers, soldiers, miners, and traders. U.S. Route 66, one of the earliest and most revered cross country motor routes, traverses the middle of the subarea and is still enjoyed by motorists today. The proposed Mojave Trails National Monument encompasses these along with outstanding scenic values; most of the proposed National Monument is included in this alternative's National Conservation Lands.

Amboy Crater is visible from a great distance as a prominent landscape feature and served as a landmark for Native Americans and early explorers, guides and immigrants. It is today recognized as a National Natural Landmark with outstanding historic and scenic values.

Remnants of the railroad, ranching and mining history of the old West are scattered throughout the National Conservation Lands in this alternative, including the historic Barnwell railroad grade (now inactive), the historic town of Hart, and the Hart and Viceroy mines in the Castle Peak area. Also included in National Conservation Lands are remnants of the Tonopah and Tidewater railroad (inactive), and the Atchinson, Topeka and Santa Fe (still active). Bonanza Spring was used as a water source along U.S. Route 66 and provided water for historic railroad steam engines. These contribute to a rich legacy of western-American and mining history.

Much of the World War II California-Arizona Maneuver Area and Desert Training Center lies within this subarea; its associated camps and maneuver areas are some of the last tangible remnants of World War II in the continental United States. These sites are scattered across this subarea, may be eligible for the National Register of Historic Places, and would be included as National Conservation Lands.

The scenic view from Hart Mountain looks out over adjacent and contiguous wilderness, including views of many of the highest peaks in the Mojave Desert. The remote nature of this area offers present-day residents and visitors the opportunity to enjoy increasingly rare natural soundscapes.

Scientific Values

Due to the importance of areas included as National Conservation Lands in this alternative for the recovery and conservation of desert tortoise and other species, ecological research

opportunities abound. With its extensive habitat linkages, this unit offers unparalleled opportunities to study wildlife movement and connections between diverse habitats. Ongoing studies of desert tortoise, bighorn sheep and other special status plants and animals provide a wealth of knowledge on the health of these species' populations, habitats and ecosystems. The subarea also offers opportunities to study groundwater and climate change to help guide future management.

The paleontological resources of the area, such as the Marble Mountains fossil beds, contribute to understanding earth's history. National Conservation Lands in this alternative also have some of the best examples of volcanism in the California desert, important both for research and as accessible natural laboratories for students and the general public. Amboy Crater National Natural Landmark provides an outstanding educational example of a symmetrical volcanic cinder cone and, along with the Pisgah area, often serves as a Mars analog for studying soil erosion and deposition processes and for testing scientific techniques and equipment including Mars rovers.

With its rich cultural resources, this subunit provides abundant opportunities for studies of humans' prehistoric and historic ways of adapting to this arid environment, and contributes to better understanding of diverse cultures. Research is promoted by cooperative management of these resources by the BLM and Native American tribes.

Acreage

This alternative would include approximately 638,000 acres of National Conservation Lands in the South Mojave-Amboy subarea in the Preferred Alternative.

Western Desert and Eastern Slope

Background Information

Elevations within the Western Desert and Eastern Slope subarea vary from about 2,000 feet to more than 8,000 feet. Mountains rise abruptly from the desert floor, creating dramatic changes in climatic conditions over short distances. The area's great diversity of vegetation communities reflects these changes in moisture and temperature. With increasing elevation, the area transitions from Mojave Desert creosote scrub through Joshua tree woodland to pinyon/juniper and oak/pine assemblages. Joshua trees may be found in close association with singleleaf pinyon pine, juniper, gray pine, Jeffrey pine, and canyonlive oak, blending Mojave and Sierran associations and resulting in a high level of biodiversity. When the area has received sufficient moisture, colorful wildflower displays are some of the most spectacular in the West Mojave Desert.

The subarea provides habitat for diverse wildlife species, including black bear, coyote, badger, mountain lion, bobcat, and important game species such as mule deer, Chukar, Mountain Quail and California Quail. Perennial streams flow though several of the canyons in the Piute Mountains and the Eastern Sierra and provide aquatic and riparian habitats, which are rare in Southern California. These riparian areas provide essential migration stop-over habitats for neotropical migratory birds, as well as nesting habitat for both migrant and resident bird species. The subarea also has high-quality habitat for raptors, and for a number of special-status animals and plants.

The cultural values of the subarea are as diverse as the ecological values and include a range of cultural resource property types from prehistoric lithic scatters to ethnographic villages and historic mining features. This area falls within the traditional homelands of the Kawaiisu, Serrano, Kitanemuk, Tubatalabal, Chemehuevi, and Western Shoshone tribal groups; places of traditional cultural importance are found throughout.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan: Pacific Crest National Scenic Trail; Kiavah, Black Mountain, Grass Valley, Golden Valley, El Paso Mountains (southwest portion), Owens Peak (south portion), Bright Star, El Paso Mountains, and SacatarTrail Wilderness Areas.

These areas are not managed by the BLM and are not part of the plan alternatives but contribute to the habitat conservation goals of the DRECP: Red Rock Canyon State Park, Audubon's California Kelso Creek Sanctuary and Kern River Preserve.

Alternative Description

Ecological Values

This alternative incorporates as National Conservation Lands important habitat linkages between the El Paso Mountains Wilderness and the Kiavah Wilderness for all wildlife. These are particularly important for sustaining populations of Mohave ground squirrel, a State-listed species, along with small portions of two other core population centers included in the Fremont Valley area.

The Desert Tortoise Research Natural Area (reduced in this alternative by approximately 250 acres) and the Western Rand Mountains (reduced in this alternative by approximately 1,000 acres), which constitute part of the Fremont-Kramer unit of designated desert tortoise critical habitat, also become National Conservation Lands in this alternative.

National Conservation Lands in the Preferred Alternative include north-south and east-west linkages across the subarea, encompassing stopover sites and habitat connectivity for the Pacific migratory bird flyway along the eastern flank of the Sierra. The National Audubon Society has nominated the riparian areas in the Sierra canyons as Important Bird Areas.

Kelso Valley and the Piute Mountains have scattered springs that are essential components of migratory and breeding bird habitat in the southern Sierra Nevada forests; and the California Audubon Kern River Preserve, the largest contiguous cottonwood riparian forest in California (preserve itself is outside of the DRECP boundary). National Conservation Lands in this alternative include Butterbredt Canyon and Spring, where birders come from all over the world to see fantastically high numbers of birds during spring migration. It is designated as a Globally Important Bird Area by the American Bird Conservancy, a renowned organization dedicated to world-wide bird conservation. Also included in National Conservation Lands is Kelso Valley Bendire's thrasher habitat, consisting of areas with blackbrush, junipers, Wiggins' cholla and Joshua trees. Bendire's thrasher is a California Species of Special Concern and a BLM Sensitive Species.

This subarea supports high densities of golden eagles for Southern California because canyon cliffs and adjacent valleys offer exceptional habitats for nesting and foraging. National Conservation Lands additions in the Preferred Alternative include Golden Eagle nesting sites on the cliffs on either side of Kelso Valley and other Sierra Nevada canyons, linking together a broad foraging area between the Sierra Nevada front and the El Paso Mountains Wilderness. This alternative's National Conservation Lands also include habitat for California condor as the species expands into its former range.

This alternative's National Conservation Lands include the southern Sierra peak of Middle Knob, which is exceptional habitat for raptors and provides unique soil conditions for sensitive plant species; and highly Unusual Plant Assemblages in the Piute Mountains where Joshua trees mingle with Jeffrey pines.

Riparian areas that adjoin drainages in Sequoia National Forest provide a preferred habitat of the Tehachapi slender salamander, riparian areas with fallen logs. This salamander is a State-listed Threatened species found only in isolated areas of the Piute and Tehachapi Mountains.

Rare plant populations and habitats encompassed by National Conservation Lands in this alternative include, in the Piute Mountains, a population of the BLM special status species Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*) with its showy pink blossoms; in Kelso Valley, the entire known range of the beautiful, minute Kelso Creek monkey flower (*Mimulus shevockii*); and the unusual botanical diversity of Short Canyon with rare endemic

plants such as Charlotte phacelia (*Phacelia nashiana*), Latimer's woodland gilia (*Saltugilia latimeri*), and State-listed Endangered Mojave tarplant (*Deinandra mohavensis*)

National Conservation Lands in this alternative also include quality habitat for burrowing owl and Townsend's big-eared bat, both BLM sensitive species.

Cultural Values

Prehistoric cultural resource properties found throughout this subarea are considered extraordinary examples of prehistoric lifeways. These include extensive assemblages of petroglyphs and pictographs, lithic workshops, obsidian and chert resource quarries, milling complexes, prehistoric and ethnographic village sites and burial complexes. These assemblages represent in excess of 10,000 years of human occupation, with the potential for many more properties with assemblages that will further our knowledge of the past. Also included are major transportation corridors and trade routes across the Sierra Nevada mountain range from the Mojave Desert to the Central Valley and California Coast. These are vital to our understanding of patterns of mobility of prehistoric and historic people of the Mojave Desert in relation to the resources and cultural groups in the Sierra Nevada, Central Valley, and Pacific Coast.

Historic resources are likewise abundant, many of which are superb examples of sites associated with exploration by the Spanish and Euro-Americans, contact with Native American communities in California, the advancement and development of the Western frontier, American vernacular architecture, mining landscapes in the West, and the Civilian Conservation Corps.

Native American values in this subarea include sacred sites, places of religious and ceremonial importance, and areas of traditional use and gathering of the Tubatalabal, Kitanemuk, Serrano, Chemehuevi, Southern Paiute, and Kawaiisu people. The majority of these tribal groups are not currently federally recognized; National Conservation Lands in this alternative include areas important to the management and preservation of the resources significant to these cultural groups, particularly those within the Jawbone-Butterbredt area, encompassing large portions of the landscape where these significant resource values have been identified.

Well-known and National Register listed sites encompassed by National Conservation Lands proposed in this alternative include Last Chance Canyon, Black Mountain, and Inscription Canyon National Register Archaeological Districts; portions of the First Los Angeles Aqueduct and its associated construction camps; Blackwater Well; Boulder Springs; Bird Springs Pass; and a small portion of the Twenty Mule Team Road at the west end of Pilot Knob north of Grass Valley Wilderness.

Scientific Values

All of the ecological and cultural resources described above have scientific value, and many are currently undergoing intensive research. Point Blue (formerly PRBO Conservation Science) collects data on migratory birds using the flyway along the east side of the Sierra range, where birds stop at Little Lake in this subarea before continuing north to Haiwee Reservoir and Owens Lake as they migrate through the valley. The US Fish and Wildlife Service is conducting studies on the California Condor as this species expands further into its former range. Researchers are studying Golden Eagles to better understand their home ranges and migratory movements. In the western portion of the subarea, researchers are attempting to define the range and population status of the Tehachapi slender salamander.

The Desert Tortoise Research Natural Area, included as National Conservation Lands in this alternative, has been the location of numerous scientific research projects because of its protected, recovering desert habitat. While the main focus of peer reviewed projects at this Research Natural Area has been desert tortoises and their habitat, studies also address Mohave ground squirrels, desert kit foxes, birds, lizards and plant communities, along with different habitat management techniques.

The Townsend's big-eared bat is the focus of several studies since populations of this species are steeply declining. Scientific studies of the Mohave ground squirrel and its essential habitat are also ongoing.

Archaeological, cultural, and historic research being conducted on National Conservation Lands proposed in this alternative is contributing greatly to the understanding of human adaptation in a wide range of ecological zones, landscape use and mobility by prehistoric and historic people, and the diversity and interaction spheres of cultural groups in this and surrounding regions.

Acreage

This alternative would include approximately 200,000 acres of National Conservation Lands in the Western Desert and Eastern Slope subarea in the Preferred Alternative.

II.3.2.2.2 National Trails

Congress designates National Trails and the Secretary of the Interior or Agriculture is responsible to assign an agency with National Trail administration responsibility. After Congressional designation, the BLM conducts an inventory of designated trails under FLPMA and National Trails System Act authorities; addresses the National Trail Management through the land use planning process, including the establishment of the National Trail Management Corridor; and manages and monitors the National Trail in

coordination with the National Trail administering agency, tribes, other agencies, partners, and interested parties.

The DRECP will make decisions for three National Trails (Pacific Crest National Scenic Trail, Old Spanish National Historic Trail and the Juan Bautista de Anza National Historic Trail) to designate the National Trail Management Corridors and management actions to safeguard the nature and purposes for the national trail designation. The corridors will provide for quality outdoor recreation potential and for the conservation and enjoyment of the nationally significant, scenic, historic, natural or cultural qualities of the areas through which the National Scenic and Historic Trails may pass.

II.3.2.2.2.1 National Scenic and Historic Trails

Goals and Objectives

Goals

- Maintain the Pacific Crest Trail corridor to provide an opportunity to experience and reflect upon the wide variety of scenic, cultural, historic, and physiographic setting characteristics of the Pacific Crest Trail and adjacent lands.
- Preserve and protect the historical remains and historical settings of the Old Spanish and Juan Batista De Anza Trails and their associated historic sites for scientific study, conservation of cultural values, and for public use and enjoyment.

Objectives

- Reduce the potential for uses and do not authorize activities that substantially interfere with the nature and purposes of the NSHT.
- Maintain and enhance the significant qualities of high-potential National Historic Trail (NHT) route segments and sites as defined in the National Trails System Act. Avoid adverse effects (as defined in the National Historic Preservation Act and the BLM/SHPO CA State Protocol) upon intact NHT segments, their settings, and associated sites.
- Protect remnants, traces, graves, campsites, landmarks, artifacts, and other remains associated with the NHTs to enhance historical research and public use and enjoyment.
- Safeguard the nature and purposes; and conserve, protect, and restore the NSHT resources, qualities, values, and associated settings and the primary use or uses.
- Provide for quality outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which the NSHT may pass.

- Conserve, protect, and restore the NSHT resources, qualities, values, and associated settings and the primary use or uses; provide premier trail visitor experiences for public benefit.
- Where transmission corridors parallel NSHT, placement and design must be performed in a manner that minimizes National Trail visual settings.
- Coordinate and collaborate on the management of the NSHT with the National Park Service, U.S. Forest Service, Pacific Crest Trail Association, the Old Spanish Trail Association, Anza Trail Foundation, and other partners to safeguard the nature and purposes of each National Trail, and maintain the scenic character and qualities of the trails.

Conservation and Management Actions

- **Management Corridor Width (see also maps)**: Establish a National Trail Management Corridor width generally 5 miles from the centerline of the trail.
- **Management of Trail Corridors -** Manage National Trails as components of the BLM's NLCS. Where National Trails overlap other National Conservation Lands, the more protective CMAs or land use allocations will apply.
- Lands and Realty
- Land Use Authorizations
- **Site Authorization –** NSHT Management Corridors would be avoidance areas. Sites authorizations would require mitigation/compensation resulting in net benefit to the NSHT.
- **Linear Rights-of-Way –** NSHT Management Corridors would be avoidance areas except in designated transmission corridors. Exclude cultural landscapes, high potential historic sites, and high potential route segments identified along historic trails corridors from transmission except in approved transmission corridors. Where development affects trail management corridors, an analysis must be performed to ensure that it does not substantially interfere with the nature and purposes of the trail, and that mitigation/compensation results in a net benefit to the trail.
- **Renewable Energy Rights-of-Way** - Exclude cultural landscapes, high potential historic sites, and high potential route segments identified along historic trails corridors from transmission except in approved DFAs and transmission corridors. Where development affects trail management corridors, an analysis must be performed to ensure that it does not substantially interfere with the nature and purposes of the trail, and that mitigation/compensation results in a net benefit to the trail.

- Land tenure
- Exchange would be permitted if it results in net benefit to NSHT values.
- Purchase and donations would be also be permited to acquire lands within NSHT.
- Minerals
- **Locatable minerals** – For the purposes of locatable minerals, National Trail corridors would be treated as "controlled" or "limited" use areas in the CDCA, requiring a Plan of Operations for greater than casual use under 43 CFR 3809.11.
- **Saleable minerals** – NSHT Management Corridors would be available for saleable mineral development if it does not substantially interfere with nature and purpose of NSHT, and would require mitigation/compensation must result in net benefit to NSHT values
- **Leasable minerals** - NSHT Management Corridors would be available for leasing with a no surface occupancy stipulation. Surface coal mining would not be allowed within the NSHT Management Corridors.
- **Recreation and Visitor Services -** Commercial and competitive Special Recreation Permits would be considered on a case-by-case basis for activities consistent with the values of the National Conservation lands unit.
- Cultural Resources
- Undertakings that result in adverse effects to NHTs and NSTs that are historic properties as defined under Section 106 of National Historic Preservation Act and the implementing regulations at 36 CFR Part 800 will not be authorized.
- All NHT segments will be assumed to contain remnants, artifacts and other properties eligible for the National Register of Historic Places, pending evaluation.
- **Visual Resources Management -** All NSHT Management Corridors will be designated as VRM Class II, except within approved transmission corridors (VRM Class III) and DFAs (VRM Class IV). However, state of the art VRM BMPs for renewable energy will be employed commensurate with the protection of nationally significant scenic resources and cultural landscapes to minimize the level of intrusion and protect trail settings.
- **Mitigation Requirements -** If a segment of a National Trail or proposed NHT traverses a DFA, it will be subject to mitigation for impacts to trail features, including, but not limited to, and not in priority order: avoidance, the cost of trail relocation, on-site mitigation and off-site mitigation. Compensation can include acquisition or restoration of corridor features and landscapes will be at a minimum of 2:1, and must result in a net benefit to the overall trail corridor. Development of

high potential route segments must not substantially interfere with the nature and purposes of the National Trail.

II.3.2.2.2.2 National Recreational Trails

Goals and Objectives

- Provide continued support for National Recreation Trails, to recognize exemplary trails of local and regional significance pursuant to the National Trails System Act of 1968. While National Scenic and National Historic Trails may only be designated by an act of Congress, National Recreation Trails may be designated by the Secretary of Interior or delegated officer through a standardized procession including a recommendation and nomination by the BLM.
- Support the goals of the NRT program to promote the use and care of existing trails and stimulate the development of new trails to create a national network of trails and realize the vision of "Trails for All Americans."

Conservation and Management Actions

- The Nadeau Road NRT was designated by the Secretary of the Interior in June 2013. The California Desert District proposes to nominate the Sperry Wash Road, El Mirage Interpretive Trail East, and El Mirage Interpretive Trail West for NRT designation.
- The Nadeau NRT Management Corridor will be protected and development avoided within 0.5 mile from centerline of the route.

II.3.2.2.3 National Wild and Scenic Rivers

Management of National Wild and Scenic Rivers would be the same as the No Action Alternative.

II.3.2.2.4 Areas of Critical Environmental Concern

ACEC designations highlight areas where special management attention is needed to protect, and prevent irreparable damage to, important historic, cultural, and scenic values, fish, or wildlife resources or other natural systems or processes; or to protect human life and safety from natural hazards. The ACEC designation indicates to the public that the BLM recognizes that an area has significant values and has established special management measures to protect those values. In addition designation also serves as a reminder that significant value(s) or resource(s) exist that must be accommodated when future management actions and land use proposals are considered near or within an ACEC. Designation may also support a funding priority. Proposed ACECs and their associated

management prescriptions must be identified and fully described in proposed RMPs and plan amendments. (BLM Manual 1613 [1988]).

The Preferred Alternative would include 127 ACECs, totaling approximately 5,403,000 acres (non-overlapping ACEC acres) on BLM-administered lands (includes ACECs within Existing Protected Areas). Required elements of the ACECs (Name, Location, and Size; Description of Value, Resource System, or Hazard; and Provision for Special Management Attention) and maps of each unit are included in the Special Unit Management Plans (National Conservation Lands and ACEC) in Appendix L. Where ACEC Management does not address a resource or use, the Plan-wide ACEC CMAs listed in Section II.3.2.3 will apply to that unit.

II.3.2.2.5 Wildlife Allocations

Wildlife resources are an important value managed by the Bureau. Bureau lands provide habitats for a variety of plant and animal species. Wildlife Allocation is a land use designation wherein the management of the lands identified will emphasize protection and enhancement of these important plant and animal habitats. The Wildlife Allocation Designation does not eliminate other existing land uses. New activities or modifications of existing land uses within these areas must be compatible with and not contrary to the wildlife values or the protection and enhancement of wildlife and plant habitat. Authorized officers will make a finding that any decision in these areas is consistent with these values.

The Preferred Alternative would include approximately 18,000 acres of Wildlife Allocations on BLM-administered lands. Descriptions and maps are included in the Special Unit Management Plans (National Conservation Lands and ACEC) in Appendix L. Specific CMAs for Wildlife Allocations are listed in Section II.3.2.3.

II.3.2.2.6 Recreation Management Areas

II.3.2.2.6.1 Special Recreation Management Areas

As defined in the BLM Land Use Planning Handbook (H-1601-1 (2005), Special Recreation Management Areas (SRMAs) are public lands units identified in land use plans to direct recreation funding and personnel to fulfill commitments made to provide specific structured recreation opportunities (i.e., activity, experience, and benefit opportunities). Both land use plan decisions and subsequent implementing action for recreation in each SRMA are geared to a strategically identified primary market – destination, community, or undeveloped areas. SRMAs are proposed throughout the plan area, including as an overlapping land allocation on all existing “open” and “limited” use OHV areas.

The Preferred Alternative would include 31 SRMAs (2,724,000 acres on BLM-administered lands). Descriptions, maps, and management actions for each SRMA are included SRMA Management Plans in Appendix L.

II.3.2.2.6.2 Extensive Recreation Management Areas

As defined in the BLM Manual for Planning for Recreation and Visitor Services (MS-8320) (BLM 2011a) and the BLM Land Use Planning Handbook (H-1601-1), ERMAs recognize existing recreation use, demand, or recreation and visitor services program investments and are managed to sustain principal recreation activities and associated qualities and conditions of the ERMA, commensurate management with other resources and resource use. ERMAs are proposed in the geographic area managed by the BLM Needles Field Office. and would include approximately 879,000 acres.

II.3.2.2.7 Lands Management to Protect Wilderness Characteristics

Under the preferred alternative, 298,000 acres that were inventoried and found to have wilderness characteristics would be managed to protect these characteristics. Management for these lands is detailed in the BLM-Specific CMAs in Section II.3.2.3.

II.3.2.3 BLM-Specific Conservation and Management Actions

The management of the following resources includes proposed changes from the no action alternative. For those resources that are not included below, the existing management as per the appropriate land use plan would apply. Specific individual CMAs were developed for National Conservation Lands, ACECs, and SRMAs. These CMAs will serve as a “fall back” for these areas. If there is a conflict, the specific National Conservation Land unit, ACEC, or SRMA Management Plan contained in Appendix L will apply. If multiple CMAs with compensation requirements apply to a particular project, these compensation requirements may be “nested”—that is, one mitigation action may satisfy multiple mitigation requirements—if appropriate.

II.3.2.3.1 Air Resources

Air quality is a concern across the Planning Area, with many of its air basins having been designated non-attainment areas under the Clean Air Act (CAA) of 1970 and Amendments of 1977 and 1990 (42 U.S.C. 7401 et seq.).

The CAA prohibits any federal land management agency from conducting, supporting, approving, licensing, or permitting any activity on federal land that does not comply with all applicable local, state, tribal, and federal air quality laws, statutes, regulations, ordinances, and implementation plans. These prohibitions are reinforced for the BLM via FLPMA. In support of these regulations, dust control plans have been or are being

developed for portions of the Planning Area in order to decrease air pollutant concentrations, increase visibility, and decrease atmospheric deposition. Adherence to air quality regulatory programs through coordination between federal and state agencies is a key to air quality management success.

Other applicable sections of the CAA include:

- Applicable National Ambient Air Quality Standards (NAAQS; Section 109)
- State Implementation Plans (SIPs; Section 110)
- Control of Pollution from Federal Facilities (Section 118)
- Prevention of Significant Deterioration, including visibility impacts to mandatory Federal Class I Areas (Section 160 et seq.)
- Conformity Analyses and Determinations (Section 176[c])

Under this plan, areas will be managed to protect their air quality and visibility in accordance with Class II objectives of Part C of the CAA amendments, unless designated another class by the State of California as a result of recommendations developed by any regional air quality management plan.

II.3.2.3.1.1 Goals and Objectives

This alternative would not amend existing goals and objectives in the current land use plans.

II.3.2.3.1.2 Conservation and Management Actions for the Entire Planning Area

- All project authorizations within the DRECP must meet the following requirements:
    - Applicable National Ambient Air Quality Standards (Section 109).
    - State Implementation Plans (Section 110).
    - Control of Pollution from Federal Facilities (Section 118) including non-point source.
    - Prevention of Significant Deterioration, including visibility impacts to mandatory Federal Class I Areas (Section 160 et seq.).
    - Conformity Analyses and Determinations (Section 176[c]).
    - Apply best management practices on a case by case basis.
    - Applicable local Air Quality Management Jurisdictions (e.g., 403 SCAQMD).

- Because project authorizations are a federal undertaking, air quality standards for fugitive dust should exceed local standards and should be applied continuously seven days a week.
- Documentation for each project will require a detailed discussion and analysis of Ambient Air Quality conditions (baseline or existing), National Ambient Air Quality Standards, criteria pollutant nonattainment areas, and potential air quality impacts of the proposed project (including cumulative and indirect impacts). This content is necessary to disclose the potential impacts from temporary or cumulative degradation of air quality. The discussion will include a description and estimate of air emissions from potential construction and maintenance activities, and proposed mitigation measures to minimize net PM10 emissions. The documentation will specify the emission sources by pollutant from mobile sources, stationary sources, and ground disturbance. A Construction Emissions Mitigation Plan will be developed.
- Fugitive dust is the number one source of PM10 pollution in the Mojave and Sonoran Deserts. The proponent must model the sources of PM10 that occur prior to construction from the project area and show their timing, duration and transport on and off site of each source. Modeling will also identify how the generation and movement of PM10 will change during and after construction of the project under all alternatives.
- A fugitive Dust Control Plan will be developed.

II.3.2.3.2 Comprehensive Trails and Travel Management

Travel and transportation are an integral part of virtually every activity that occurs on public lands, including recreation, livestock grazing, and wildlife management, commodity resources management, ROWs to private inholdings, and public land management and monitoring. Comprehensive Travel and Transportation Management is the planning, management, and administration of motorized and non-motorized roads, primitive roads, and trails to ensure that public access, natural resources, and regulatory needs are considered. Two of the BLM's greatest management challenges are providing reasonable and varied routes for access to public lands and providing areas for a variety of motorized and non-motorized recreation, various landscapes, user interests, equipment options, weather conditions, transportation infrastructure, and resource constraints all must be considered.

II.3.2.3.2.1 Goals and Objectives

This alternative would not amend existing goals and objectives in the current land use plans. In addition to those goals and objectives, the DRECP would include the following goals and objectives:

- Provide reasonable, safe, and environmentally sound access to visitors, local residents, licensed and permitted activities, and property owners through coordination and collaboration on travel systems with other agencies, state and local governments and interested stakeholders.
- Through current and future Travel and Transportation Management Plans, provide a network of roads, primitive roads, and trails that serves the transportation needs for commercial, recreational, and casual uses of public lands while providing appropriate protection of natural and cultural resources. Designate Roads, Primitive Roads, and Trails to meet the regional goals and objectives:
    - Maintain network of roads, primitive roads, and trails to protect sensitive resources and provide for an acceptable level of health and safety risk given the type of use
    - Utilizes the latest best management practices for the construction, reconstruction or maintenance and adopts new best management practices as they emerge
    - Utilize route designations as developed in existing, and future, Travel Management Plans, including, but not limited to, CDCA, NEMO, WECO, WEMO Plans; and the Bakersfield and Bishop RMPs
- Protect road, primitive road and trail access to SRMAs, ERMAs, OHV Open Areas, Level 1, 2, and 3 Recreation Facilities, and Points of Interest as identified on Desert Access Guides and other Recreation Guides. (See also Section II.3.2.3.8.).

II.3.2.3.2.2 Components of a Designated Travel Network

In 2006, the BLM issued Instruction Memorandum No. 2006-173, which established policy for the use of terms and definitions associated with the management of transportation-related linear features. It also set a data standard and a method for storing electronic transportation asset data. According to the memorandum, all transportation assets are defined as follows:

- **Road:** A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use. These may include ROW roads granted by the BLM to other entities.

- **Primitive Road:** A linear route managed for use by four-wheel drive or high-clearance vehicles. These routes do not normally meet any BLM road design standards.
- **Trail:** A linear route managed for human-powered, stock, or OHV forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

Designated Roads, Primitive Roads, and Trails are categorized as follows:

- Tier 1: Roads and Primitive Roads with high values for commercial, recreational, casual uses, and/or to provide access to other recreation activities.
- Tier 2: Roads and Primitive Roads with high values for recreation and other motorized access (i.e., important through routes).
- Tier 3: Primitive Roads and Trails with high value for motorized and non-motorized recreational pursuits (i.e., spur routes).

II.3.2.3.2.3 Off-Highway Vehicle Management

OHVs are synonymous with off-road vehicles. As defined in 43 CFR, 8340.0-5 (a): Off-road vehicle means any motorized/battery-powered vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain.

In accordance with 43 CFR 8342.1, the BLM's regulations for OHV management, "the authorized officer shall designate all public lands as open, limited, or closed to [OHVs]." As such, all public lands within the Planning Area have been designated in one of three OHV designation categories, as follows:

- Open Area Designations are used for intensive OHV or other transportation use areas where there are no special restrictions or where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel.
- Limited Area Designations are used where travel must be restricted to meet specific resource/resource use objectives. For areas classified as limited, the BLM must consider a range of possibilities, including travel that will be limited to the following:
    - Types or modes of travel, such as foot, equestrian, bicycle, and motorized
    - Existing roads and trails
    - Time or season of use; limited to certain types of vehicles (OHVs, motorcycles, all-terrain vehicles, high clearance, etc.); limited to licensed or permitted vehicles or use

  - BLM administrative use only
  - Other types of limitations
- Closed Area Designations prohibit vehicular travel, both motorized and mechanized, transportation cross-country and on routes, except for where valid rights continue to allow access, such as within a designated Wilderness Area. Areas are designated closed if closure to all vehicular use is necessary to protect resources, promote visitor safety, or reduce use conflicts.

II.3.2.3.2.4 Back Country Byways Program

The BLM developed the Back County Byway Program to complement the National Scenic Byway Program established by the US Secretary of Transportation. Back County Byways highlight the spectacular nature of the western landscapes. These routes vary from narrow graded roads that are passable only during a few months of the year to two-lane paved highways with year-round access.

Comply with the policy and guidelines of the BLM Back Country Byway Program and intent to showcase routes with high scenic and outstanding natural, cultural, historic or other values consistent with the designation. Where appropriate and feasible, highlight the spectacular nature of the western landscapes through education and interpretation along linear travel routes which provide recreational driving opportunities that allow for the experiences of solitude and isolation by:

- Maintaining or improving access to BLM recreational destinations and activities.
- Helping meet the increasing demand for pleasure driving in back country environments.
- Facilitating effective partnerships at the local, state, and national levels.
- Contributing to local and regional economies through increased tourism.
- Increasing public awareness of the availability of outstanding recreation attractions on public lands.
- Enhancing the visitors' recreation experience and communicate the multiple-use management message through an effective wayside interpretive program.
- Increasing the visibility of BLM as a major supplier of outdoor recreation opportunities.
- Managing the increased use created through the program to minimize impacts to the environment.
- Contributing to the National Scenic Byways Program in a way that is uniquely suited to national public lands managed by BLM.

Types of Back Country Byways

Back country byways are designated by the type of road and the vehicle needed to safely travel the byway. Some back country byways vary from a single track bike trail to a low speed paved road that traverses back country areas. Segments of Back Country Byways are subdivided into four types based on the characteristic of the road.

Due to their remoteness, byway travelers should always inquire locally as to byway access and road conditions.

- **Type I –** Roads are paved or have an all-weather surface and have grades that are negotiable by 2-wheel drive vehicles and passenger cars. Most of these roads are narrow, slow speed, secondary routes though public lands.
- **Type II** – Roads that require high-clearance type vehicles such as trucks or 4-wheel drive vehicles. These roads are usually not paved, but may have some type of surfacing. Grades, curves, and road surface are such that they can be negotiated with a 2-wheel drive high clearance vehicle without undue difficulty.
- **Type III** – Roads require 4-wheel drive vehicles or other specialized vehicles such as dirt bikes, all-terrain vehicles (ATVs), etc. These roads are usually not surfaced, but are managed to provide for safety and resource protection needs. These roads can often have steep grades, uneven tread surfaces, and other characteristics that will require specialized vehicles to negotiate usually at slow speeds.
- **Type IV** – Trails are managed specifically to accommodate dirt bike, mountain bike, snowmobile or all-terrain vehicle use. Most of these routes are single track trails.

II.3.2.3.2.5 Conservation and Management Actions for the Entire Planning Area

- Maintaining and manage adequate Road, Primitive Road, and Trail Access to and within SRMAs, ERMAs, OHV Open Areas, and Level 1, 2, and 3
- Avoid large-scale disturbance within ½ mile from centerline of tier 2 Roads/Primitive Roads, and 300’ from centerline of tier 3 primitive roads/trails. If avoidance of Tier 2 and 3 roads, primitive roads and trails is not practicable, relocate access to the same or higher standard and maintain the setting characteristics and access to recreation activities, facilities, destinations.
- Manage other significant linear features such as Mojave Road, Bradshaw Trail, or other recognized linear features to protect their important recreation activities, experiences and benefits. Prohibit large-scale disturbance within ½ mile (from centerline) of such linear features.

- If residual impacts to Tier 1 and Tier 2 roads/primitive roads, Back Country Byways, or significant linear features occur from adjacent DFAs or other large-scale disturbance, commensurate compensation in the form of enhanced recreation operations, access, recreation facilities or opportunities will be required.
- Manage OHV as per the appropriate Transportation and Travel Management Plan/RMP and/or the SRMA Objectives as outlined in Appendix L as Open, Limited or Closed.
- Manage Back Country Byways as a component of BLM Recreation and Travel and Transportation Management program.
- Manage Recreation Facilities consistent with the objectives for the recreation management areas and facilities (see also Section II.3.2.3.8).

II.3.2.3.2.6 Conservation and Management Actions in Development Focus Areas and DRECP Variance Lands, Future Assessment Areas, and Special Analysis Areas

- Avoid Tier 1, Tier 2, Tier 3 roads/primitive roads/trails, Backcountry Byways, and other significant linear features. If avoidance is not practicable, relocate access to the same or higher standard and maintain the recreation setting characteristics and access to recreation activities, facilities, and destination.
- If residual impacts to Tier 1 and Tier 2 roads/primitive roads/trails, Backcountry Byways, or other significant linear features cannot be protected and maintained, commensurate compensation in the form of an enhanced recreation operations, recreation facilities or opportunities will be required.

II.3.2.3.2.7 Conservation and Management Actions National Conservation Lands, Areas of Critical Environmental Concern, and Wildlife Allocations

- Refer to the individual National Conservation Lands/ACEC Special Unit Management Plans in Appendix L for specific objectives, management actions and allowable uses. Manage roads/trails consistent with National Conservation Lands/ACEC goals and objectives and as designated in Trails and Travel Management Plans (TTMPs) or Resource Management Plans (RMPs).

II.3.2.3.2.8 Conservation and Management Actions for Special Recreation Management Areas

- Refer to the individual SRMA documents for SRMA/Recreation Management Zone specific objectives, management actions, and allowable uses. Protect SRMAs for their unique/special recreation values. Manage roads/primitive roads/trails

consistent with SRMA objectives and as designated in Transportation and Travel Management Plan/RMPs.

II.3.2.3.3 Cultural Resources and Tribal Interests

The management of cultural resources on BLM land is done in compliance with several federal laws, including the Antiquities Act of 1906; the National Historic Preservation Act of 1966, as amended; the NEPA of 1969; EO 11593 "Protection and Enhancement of the Cultural Environment"; the FLPMA; the American Indian Religious Freedom Act of 1978; the Archaeological Resource Protection Act of 1979; the Native American Graves Protection and Repatriation Act of 1990; EO 13007, "Indian Sacred Sites"; and EO 13287, "Preserve America." Cultural resources are administered via the multiple-use mandate of FLPMA in six categories; scientific use, conservation, traditional use, public use, or experimental use. To balance this multiple-use mandate with the various compliance requirements, the BLM may impose safeguards against incompatible land and resource uses through withdrawals, stipulations on leases and permits, design requirements, and similar measures. These measures are developed and recommended by an appropriately staffed interdisciplinary team in accordance with policies described in the BLM Manual, Sections 8100 through 8170, and consistent with the statewide protocol with the California SHPO and other guidelines from the SHPO. This section provides the proposed general goals, objectives, and action items for the preferred alternative to manage cultural resources within the BLM jurisdiction in the DRECP consistent with these various requirements. Some Individual units (SRMA, ACEC, National Conservation Lands) also have additional specific and/or more restrictive cultural resource rules described in those sections.

II.3.2.3.3.1 Goals and Objectives

This alternative would not amend existing goals and objectives in the current land use plans. In addition to those goals and objectives, the DRECP would include the following goals and objectives:

Goals

- Identify, preserve, and protect significant cultural resources so that they are available for appropriate uses by present and future generations.
- Give full consideration to cultural resources in land use planning and management decisions by integrating cultural resources into a regional framework of information.
- Broaden the archaeological and historical knowledge of the DRECP through inventory efforts and the use of existing data to identify the full spectrum of cultural resources in the DRECP.

- Seek to reduce imminent threats to cultural resources and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resource uses.
- Enhance public understanding and appreciation of cultural resources.
- Seek to increase public involvement in the monitoring and protection of cultural resources.
- Give full consideration to Native American knowledge and values in land use planning and management decisions, consistent with statute, regulation and policy.
- Take into account Native American values and concerns about places of religious and cultural importance to Native Americans in land use planning and management decisions, consistent with statute, regulation and policy.

Objectives

- Ensure management of cultural resources is consistent with agency responsibilities provided in Section 110 of the National Historic Preservation Act.
- Ensure federal actions that may affect historic properties are properly reviewed and considered consistent with the requirements of Section 106 of the National Historic Preservation Act.
- Ensure confidentiality of information about sensitive cultural resources consistent with Section 304 of the National Historic Preservation Act and Section 9 of the Archaeological Resources Protection Act.
- Manage evaluated cultural resources and those forecast to occur in the decision area within one or more of six cultural use allocations: scientific use; conserve for future use; traditional use; public use; experimental use; or discharged from use, as described in the BLM 8100 Manual.
- Cultural resources GIS data, including site locations and inventories, will be maintained and updated by each BLM field office cultural resource specialist according to established BLM standards in a cultural resource geodatabase.
- The cultural resources GIS data will be available to analyze known and predicted site sensitivity across the DRECP.
- Provide and encourage educational outreach, heritage tourism opportunities, and site stewardship programs that involve the public through partnerships and other means.
- Facilitate cultural resources research opportunities to contribute to the understanding of the ways humans have used and influenced natural systems and processes.

- BLM actions and authorizations will minimize inadvertent impacts on cultural resources including places of traditional cultural and religious importance to Native Americans.

In addition to the plan wide goals and objectives, the following goals and objectives apply to public lands in National Conservation Lands and ACECs.

Goals

- Ensure that management actions in non-cultural resource ACECs do not conflict with appropriate management of cultural resources in ACECs.
- Ensure that management actions for cultural resource ACECs are sufficiently tailored to address the unique circumstances of each individual ACEC.

Objectives

- Establish baseline resource information by identifying and documenting cultural resources.
- Identify threats to cultural resources.
- Monitor and protect resources.

II.3.2.3.3.2 Conservation and Management Actions

Conservation and Management Actions for the Entire Planning Area

- Continue working with the California Office of Historic Preservation to develop and implement a program for record keeping and tracking agency actions that meets the needs of BLM and OHP organizations pursuant to existing State and National agreements and regulation (BLM State Protocol Agreement; BLM National Programmatic Agreement).
- Using relevant archaeological and environmental data, identify priority geographic areas for new field inventory, based upon a probability for unrecorded significant resources and other considerations.
- Identify places of traditional cultural and religious importance to federally recognized tribes and maintain access to these locations for traditional use.
- Design BLM actions and authorizations to minimize impacts on cultural resources including places of traditional cultural and religious importance to federally recognized tribes.

- Develop interpretive material to correspond with recreational uses to educate the public about protecting cultural resources and avoiding disturbance of archaeological sites.
- Develop partnerships to assist in the training of groups and individuals to participate in site stewardship programs.
- Coordinate with visual resources staff to ensure VRM Classes consider cultural resources and tribal consultation to include landmarks of cultural significance to Native Americans (TCPs, trails, etc.).
- Conduct regular contact and consultation with federally recognized Tribes and individuals, consistent with statute, regulation and policy.
- Promote desert vegetation communities by compensatory mitigation, off-site mitigation, and other means for Native American vegetation collection.
- Promote and protect desert fan palm oasis communities by compensatory mitigation, off-site mitigation, and other means for Native American cultural values.
- Promote and protect desert microphyll woodland communities by compensatory mitigation, off-site mitigation, and other means for Native American cultural values.

Conservation and Management Actions in Development Focus Areas and Study Area Lands, and Transmission Corridors

The following CMAs will apply to renewable energy and transmission ROWs:

BLM developed and maintains a geodatabase for Cultural Resources and Cultural Resources investigations in a GIS. The geodatabase is regularly updated with newly recorded and re-recorded resource and investigation data. However, while the geodatabase includes location information (feature classes or shapefiles), the associated information about each resource or investigation (attribute data) is limited or inconsistent. As it exists now, the geodatabase cannot be used for predictive analyses like those recommended in *A Strategy for Improving Mitigation Policies and Practices of the Department of the Interior* (DOI 2014). However, with some updates, the geodatabase would be a powerful tool for identifying potential conservation priorities as well as development opportunities. Many of the CMAs below are intended to facilitate the update of BLM's geodatabase, and require its use when the updates are complete.

- Require the applicant to pay all appropriate costs associated with the following processes, through the appropriate BLM funding mechanism:
    - All appropriate costs associated with the BLM's analysis of the DRECP geodatabase and other sources for cultural resources sensitivity;

  - All appropriate costs associated with preliminary sensitivity analysis;
  - All appropriate costs associated with the Section 106 process including the identification and defining of cultural resources. These costs may also include logistical, travel, and other support costs incurred by tribes in the consultation process.
  - All appropriate costs associated with updating the DRECP cultural resources geodatabase with project specific results.
- A management fee, defined at a per acre rate and annual escalation provision for the life of the grant, will paid to the BLM as partial mitigation for the cumulative effects on cultural resources across the Plan Area and may be used to develop regional research designs and other forms of off-site and compensatory mitigation.
- The management fee rate will be determined through the programmatic Section 106 consultation process that will be completed as part of the DRECP land use plan amendment.
- Demonstrate that results of cultural resources sensitivity, based on the DRECP geodatabase, and other sources, are used as part of the initial planning pre-application process and to select of specific footprints for further consideration.
- Provide a statistically significant sample survey as part of the pre-application process, unless the BLM determines the DRECP geodatabase and other sources are adequate to assess cultural resources sensitivity of specific footprints.
- Provide justification in the application why the project considerations merit moving forward if the specific footprint lies within an area identified or forecast as sensitive for cultural resources by the BLM.
- Complete the Section 106 Process as specified in 36 CFR Part 800, or via an alternate procedure, allowed for under 36 CFR Part 800.14 prior to issuing a ROD or ROW grant on any utility-scale renewable energy or transmission project. For utility-scale solar energy developments, the BLM may follow the Solar PA.
- The Ford Dry Lake Basin and surrounding shoreline up to the 380 foot contour comprises mitigation agreed upon earlier by the Genesis project owners, the BLM, the CEC, the Colorado River Indian Tribes, and the Ft. Mojave tribe as the proposed Ford Dry Lake National Register Archaeological District and may not be developed.

Conservation and Management Actions for National Conservation Lands and Areas of Critical Environmental Concern

- Survey, identify and record new cultural resources within ACEC boundaries.
- Update records for existing cultural resources within ACECs.

- Develop baseline assessment of specific natural and man-made threats to cultural resources in ACECs (i.e., erosion, looting and vandalism, grazing, OHV).
- Provide on-going monitoring for cultural resources based on the threat assessment.
- Identify, develop or incorporate standard protection measures and best management practices to address threats.
- Where specific threats are identified, implement protection measures consistent with agency Section 106 responsibilities.

II.3.2.3.4 Lands and Realty

This section provides guidelines on land tenure actions and the evaluation of land use authorizations within the Planning Area. These guidelines are intended to allow BLM to dispose of and acquire lands to meet plan objectives, and allow for the permitting of ROWs in suitable locations.

II.3.2.3.4.1 Goals and Objectives

This alternative would not amend existing goals and objectives in the current land use plans. In addition to those goals and objectives, the DRECP would include the following goals and objectives:

- Continue implementing a land exchange program with the State of California, to be utilized for the dual purposes of renewable energy development and land conservation.
- Identify BLM lands available for exchange and sale in each land classification.
- Apply limitations to the development of large-scale ROWs in areas identified for conservation (National Conservation Lands, ACEC and SRMAs).

II.3.2.3.4.2 Conservation and Management Actions

Conservation and Management Actions for the Entire Planning Area

- Identify donated or acquired lands as exclusion areas when development is incompatible with deed restrictions.
- Allow development of acquired lands at the discretion of the CA State Director.
- Process use authorization applications within National Trail Management Corridors in accordance with the management prescriptions outlined for trail corridors in this plan.
- Acquire lands within conservation areas identified by this plan, prioritizing the acquisition of lands within NLCS (National Conservation Lands) designated areas.

Acquisition parcels should be within or adjacent to an identified conservation area and would be managed according to the conservation management requirements for the conservation area.

- The MUCs used to determine land tenure in the CDCA Plan will be replaced by areas listed in the CMAs below.
- In non-designated lands (i.e. lands not covered by the specific CMAs below), make lands available for disposal through exchange or land sale.
- Any actions on Catellus Agreement lands will be consistent with deed restrictions.
- Any actions on Catellus Agreement lands will be subject to the approval of the California State Director.

Exchanges with the State of California

- Continue land exchanges with the State of California as described in the CDCA Plan in the Goals and Objectives section above.
- Enter into land exchanges with the California State Lands Commission (CSLC) which convey BLM lands suitable for, or developed as, large-scale renewable energy related projects in exchange for CSLC school lands located in and adjacent to designated conservation areas. These exchanges will follow the procedures outlined in Memorandum of Agreement Relating to Land Exchanges to Consolidate Land Parcels signed by the BLM and CSLC on May 21, 2012.
- Prioritize land exchange proposals from the CSLC on available lands if there are competing land tenure proposals (e.g. land sale or exchange), CSLC proposals that enhance revenues for schools will generally be given priority.

Conservation and Management Actions in Development Focus Areas and Study Area Lands

- Make lands within DFAs available for disposal by sale or exchange under Section 203(a)(1), 203(a)(3), 206 and 209 of FLPMA.
- Allow development of acquired lands within DFAs at the discretion of the CA State Director unless development is incompatible with applicable deed restrictions.
- Segregate lands proposed for exchange in DFAs from the public land laws for 5 years, but allow for wind, solar, transmission or geothermal applications and their associated facilities.
- Review withdrawn lands in DFAs upon receipt of a ROW application and if appropriate modify to allow for issuance of ROW grants.

- Cost recovery funding used to process a ROW application may be used to adjudicate and remedy any conflicting land withdrawals, if necessary.
- Make public lands in DFAs available for selection by the CSLC in lieu of base lands within DFAs. Base lands are School Lands the State of California was entitled to but did not receive title to due to prior existing encumbrances.
- If lands currently classified as Future Assessment Areas (FAAs) become designated as DFAs through a plan amendment, they will be made available for disposal through exchange and land sales through the authorities indicated above.
- In Study Area Lands, make lands available for disposal by exchange, but unavailable for disposal by land sale.

Conservation and Management Actions in National Conservation Lands

- Renewable energy projects and related ancillary facilities are not allowed.
- Avoid use authorizations that would negatively affect the values for with the National Conservation Lands are designated, unless mitigation or compensation would result in a net-benefit to the National Conservation Lands. Development would be limited to 1% of total authorized disturbance, or to the level allowed by a collocated ACEC or Wildlife Allocation, whichever is more restrictive.
- Public access will be designed to facilitate or enhance the use, enjoyment, conservation, protection, and restoration of National Conservation Land values identified for the subregion.
- Acquire lands through exchange, purchase, or donation in accordance with the CMAs outlined for National Conservation Lands.
- Make lands available for disposal through exchange if it results in a net benefit to the values of National Conservation Lands.

Conservation and Management Actions in Areas of Critical Environmental Concern

- Renewable energy and ancillary facilities are not allowed in ACECs.
- Use authorization applications will be evaluated in accordance with allowable uses identified in the ACEC worksheets in this plan.
- Land use authorizations are not to exceed the disturbance cap, if such a cap has been established in the worksheets for the ACEC.
- Acquire lands through exchange, purchase, or donation.
- Make lands available for disposal through exchange if it results in a net benefit to the values of the ACEC.

Conservation and Management Actions in Wildlife Allocations

- Renewable energy projects and related ancillary facilities are not allowed.
- Applications for use authorizations that provide a benefit to the management area or serve public interests may be allowed, unless prohibited by statute.
- Acquire lands through exchange, purchase, or donation.
- Make lands unavailable for disposal.

Conservation and Management Actions in Special Recreation Management Areas

- Renewable energy projects and related ancillary facilities are not allowed. Two exceptions to this management action are (1) geothermal development would be an allowable use if a geothermal-only DFA overlays the SRMA and the lease includes a no surface occupancy stipulation, and (2) if a DRECP Variance Land designation overlays the SRMA, renewable energy may be allowed on a case-by-case basis if the proposed project is found to be compatible with the specific SRMA values.
- Land use authorizations must be consistent with the specific CMAs developed for each SRMA.
- Acquire lands through exchange, purchase, or donation.
- Lands are available for disposal to parties that will manage the land in accordance with the recreational values of the SRMA.

II.3.2.3.5 Livestock Grazing

The BLM within the State of California manages 572 permits/leases on 699 grazing allotments scattered over 8.1 million acres. These permits/leases represent approximately 525,000 animal unit months of forage for livestock. The Plan Area touches approximately 61 allotments over a total land base of 3,120,393 acres.

These domestic livestock are managed under the Taylor Grazing Act of 1934, NEPA, ESA, FLPMA, and Public Rangelands Improvement Act of 1978. Within the CFR Part 4100 are specific guidance for administration of grazing on the public lands.

In managing livestock grazing on public rangelands, the BLM's overall objective is to ensure the long-term health and productivity of these lands and to create multiple environmental benefits that result from healthy watersheds. The BLM manages livestock grazing in a manner aimed at achieving and maintaining public land health. To achieve desired conditions, the agency uses rangeland health standards and guidelines, which the BLM developed in the 1990s with input from citizen-based Resource Advisory Councils across the West.

Livestock grazing now competes with more uses than it did in the past, as other industries and the general public look to the public lands as sources of both conventional and renewable energy and as places for outdoor recreation opportunities, including OHV use.

II.3.2.3.5.1 Goals and Objectives

This alternative would not amend existing goals and objectives in the current land use plans.

II.3.2.3.5.2 Conservation and Management Actions

CMAs for livestock grazing on BLM-administered lands are outlined in Appendix H, and include actions that apply to project-specific activities. The BLM CMAs for grazing include proposed standards of rangeland health and guidelines for grazing management within the California Desert District allotments (Bishop and Bakersfield have approved standards and guidelines in place and are not modified by the DRECP). The grazing regulations found at 43 CFR 4110.4-2(b) describe the process of devoting parts or all of a grazing allotment to another purpose and providing the permittees and lessees a 2-year notification. Relinquishment of grazing permits and leases falls under the 2012 Appropriations Act (Public Law 112-74) and provides policy whereby permittees and lessees can donate their permits and leases back to the Bureau of Land Management for permanent relinquishment through the Land Use Planning process. Grazing allotments that were voluntarily relinquished prior to fiscal year 2012 would be identified in the DRECP as permanently unavailable for grazing.

Standards of Rangeland Health and Guidelines for Grazing Management

Regional Public Land Health Standards and Guidelines are required for all BLM administered lands in accordance with Part 43 of the CFR subsection 4180. These regulations require that State Directors, in consultation with Resource Advisory Councils, develop Standards for Rangeland Health and Guidelines for grazing management.

The BLM in coordination and consultation with the California Desert District Advisory Committee (see Section 601 of the FLPMA as amended) developed standards and guidelines for the CDCA and used the following land use plan amendments to analyze the specific standard and guideline and to provide the public and opportunity to comment.

- Northern and Eastern Colorado Desert Management Plan—NECO—ROD signed Dec. 2002 (BLM 2002a)
- Northern and Eastern Mojave Desert Management Plan—NEMO—ROD signed Dec. 2002 (BLM 2002b)
- West Mojave Plan—WEMO—ROD signed March 2006 (BLM 2006)

The regulations require approval by the Secretary of the Interior prior to full implementation of standards and guidelines. Until approval is received, the fallback standards and guidelines will be used.

The regulations require approval by the Secretary of the Interior prior to full implementation of the CDD standards and guidelines. Until approval is received, the fallback standards and guidelines will be used in the 5 Desert District Offices.

Bakersfield and Bishop Field Offices are covered under the Central California Standards and Guidelines and require no additional approval to continue to use that document.

Standards and Guidelines for the California Desert District

Standards of land health are expressions of levels of physical and biological condition or degree of function required for healthy lands and sustainable uses, and define minimum resource conditions that must be achieved and sustained. (H-4180-1 Rangeland Health Standards)

Guideline. A practice, method or technique determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting the standard. Guidelines are tools such as grazing systems, vegetative treatments, or improvement projects that help managers and permittees achieve standards. Guidelines may be adapted or modified when monitoring or other information indicates the guideline is not effective, or a better means of achieving the applicable standard becomes appropriate. (H-4180-1 Rangeland Health Standards)

The following **Standards** for the CDCA (applies to all BLM administered lands within the DRECP portion of the CDCA) from the NECO, NEMO, WEMO, and PSSCRMP land use plan amendments.

Soils

Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, land form, and past uses. Adequate infiltration and permeability of soils allow accumulation of soil moisture necessary for optimal plant growth and vigor, and provide a stable watershed, as indicated by:

- Canopy and ground cover are appropriate for the site.
- There is a diversity of plant species with a variety of root depths.
- Litter and soil organic matter are present at suitable sites.
- Microbiotic soil crusts are maintained and in place at appropriate locations.

- Evidence of wind or water erosion does not exceed natural rates for the site.
- Soil permeability, nutrient cycling, and water infiltration are appropriate for the soil type.

Native Species

Healthy, productive, and diverse habitats for native species, including special status species (federal threatened and endangered, federally proposed, federal candidates, BLM sensitive, or California State threatened and endangered, and Unique Plant Assemblages), are maintained in places of natural occurrence, as indicated by:

- Photosynthetic and ecological processes are continuing at levels suitable for the site, season, and precipitation regimes.
- Plant vigor, nutrient cycle, and energy flow are maintaining desirable plants and ensuring reproduction and recruitment.
- Plant communities are producing litter within acceptable limits.
- Age class distribution of plants and animals are sufficient to overcome mortality fluctuations.
- Distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events.
- Alien and noxious plants and wildlife do not dominate a site or do not require action to prevent the spread and introduction of noxious/invasive weeds.
- Appropriate natural disturbances are evident.
- Populations and their habitats are sufficiently distributed and healthy to prevent the need for new listing as special status species.

Riparian/Wetland and Stream Function

Wetland systems associated with subsurface, running, and standing water function properly and have the ability to recover from major disturbances. Hydrologic conditions are maintained, as indicated by:

- Vegetative cover adequately protects banks and dissipates energy during peak water flows.
- Dominant vegetation is an appropriate mixture of vigorous riparian species.
- Recruitment of preferred species is adequate to sustain the plant community.
- Stable soils store and release water slowly.

- Plant species present indicate soil moisture characteristics are being maintained.
- There is minimal cover of shallow-rooted invader species, and they are not displacing deep-rooted native species.
- Shading of stream courses and water courses is sufficient to support riparian vertebrates and invertebrates.
- Stream is in balance with water and sediment being supplied by the watershed.
- Stream channel size (depth and width) and meander is appropriate for soils, geology, and landscape.
- Adequate organic matter (litter and standing dead plant material) is present to protect the site from excessive erosion and to replenish soil nutrients through decomposition.

Water Quality

Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California State standards, as indicated by:

- The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen.
- Standards are achieved for riparian, wetlands, and water bodies.
- Aquatic organisms and plants (e.g., macro-invertebrates, fish, algae, and plants) indicate support for beneficial uses.
- Monitoring results or other data show water quality is meting the Standard.

The following **Guidelines** for grazing in the CDCA (applies to all BLM administered lands within the DRECP portion of the CDCA) from the NECO, NEMO, WEMO, and PSSCRMP land use plan amendments.

- Facilities will be located away from riparian-wetland areas whenever they conflict with achieving or maintaining riparian-wetland functions.
- The development of springs and seeps or other projects affecting water and associated resources will be designed to protect the ecological functions and processes of those sites.
- Grazing activities at an existing range improvement that conflict with achieving proper functioning conditions (PFC) and resource objectives for wetland systems (lentic, lotic, springs, addits, and seeps) would be modified so PFC and resource

objectives can be met, and incompatible projects would be modified to bring them into compliance. The BLM would consult, cooperate, and coordinate with affected interests and livestock producers prior to authorizing modification of existing projects and initiation of new projects. New range improvement facilities would be located away from wetland systems if they conflict with achieving or maintaining PFC and resource objectives.

- Supplements (e.g., salt licks) will be located one-quarter mile or more away from wetland systems so they do not conflict with maintaining riparian-wetland functions.
- Management practices will maintain or promote perennial stream channel morphology (e.g., gradient, width/depth ratio, channel roughness, and sinuosity) and functions that are appropriate to climate and landform.
- Grazing management practices will meet state and federal water quality Standards. Impoundments (stock ponds) having a sustained discharge yield of less than 200 gallons per day to surface or groundwater, are excepted from meeting state drinking water standards per California State Water Resources Control Board Resolution Number 88-63.
- In the CDCA all wildfires in grazing allotments will be suppressed. However, to restore degraded habitats infested with invasive weeds (e.g., tamarisk), prescribed burning may be used as a tool for restoration. Prescribed burns may be used as a management tool where fire is a natural part of the regime.
- In years when weather results in extraordinary conditions, seed germination, seedling establishment, and native plant species growth should be allowed by modifying grazing use.
- Grazing on designated ephemeral rangeland could be allowed only if reliable estimates of production have been made, an identified level of annual growth or residue to remain on site at the end of the grazing season has been established, and adverse effects on perennial species are avoided.
- During prolonged drought, range stocking will be reduced to achieve resource objectives and/or prescribed perennial forage utilization. Livestock utilization of key perennial species on year-long allotments should be checked about March 1 when the Palmer Severity Drought Index/Standardized Precipitation Index indicates dry conditions are expected to continue.
- Through the assessment process or monitoring efforts, the extent of invasive and/or exotic plants and animals should be recorded and evaluated for future control measures. Methods and prescriptions should be implemented, and an evaluation would be completed to ascertain future control measures for undesirable species.

- Restore, maintain or enhance habitats to assist in the recovery of federally listed threatened and endangered species. Restore, maintain or enhance habitats of special-status species including federally proposed, federal candidates, BLM sensitive, or California State threatened and endangered to promote their conservation.
- Grazing activities should support biological diversity across the landscape, and native species and microbiotic crusts are to be maintained.
- Experimental research efforts should be encouraged to provide answers to grazing management and related resource concerns through cooperative and collaborative efforts with outside agencies, groups, and entities.
- Livestock utilization limits of key perennial species will be as shown in (see Table II.3-49) for the various range types.

Table II.3-49
Livestock Utilization Limits of Key Perennial Species

Range Type	Percent Use of Key Perennial Species	
	Poor-Fair range condition or growing season	*Good-Excellent range condition or dormant season*
Mojave Sonoran Desert scrub	25	40
Salt Desert shrub land	25	35
Semi-desert grass and shrub land	30	40
Sagebrush grassland	30	40
Mountain shrub land	30	40

Monitoring

Monitoring of grazing allotment resource conditions would be routinely assessed to determine if Public Land Health Standards are being met. In those areas not meeting one or more Standards, monitoring processes would be established where none exist to monitor indicators of health until the Standard or resource objective has been attained. Livestock trail networks, grazed plants, livestock facilities, and animal waste are expected impacts in all grazing allotments and these ongoing impacts would be considered during analysis of the assessment and monitoring process. Activity plans for other uses or resources that overlap an allotment could have prescribed resource objectives that may further constrain grazing activities (e.g., ACEC). In an area where a Standard has not been met, the results from monitoring changes to grazing management required to meet Standards would be reviewed annually. During the final phase of the assessment process, the Range Determination includes the schedule for the next assessment of resource conditions. To

attain Standards and resource objectives, the best science would be used to determine appropriate grazing management actions. Cooperative funding and assistance from other agencies, individuals, and groups would be sought to collect prescribed monitoring data for indicators of each Standard.

Conservation and Management Actions for the Entire Planning Area

- In the CDCA Plan area only, accept grazing permit/lease donations in accordance with legislation in the Fiscal Year 2012 Appropriations Act (Public Law 112-74).
- Outside of the CDCA Plan area, determine whether special status species would benefit from making allotments unavailable to domestic livestock grazing in the event that the permit/lease is relinquished.
- If the BLM determines that grazing is to be removed from an authorized grazing allotment, provide the grazing permittee/lessee a two-year notification as outlined in the Grazing Regulations found at 43 CFR 4110.4-2(b) and WO IM 2011-181 (BLM 2011).
- For grazing allotments that BLM has received a voluntary request for relinquishment prior to fiscal year 2012, continue the planning process for making these allotments unavailable for grazing.
- Complete the process for approving rangeland health standards and guidelines for the remaining portions of the CDCA planning area (NEMO, WEMO, NECO).
- Make Pilot Knob, Valley View, Cady Mountain, Cronese Lake, and Harper Lake allotments, allocations unavailable for livestock grazing and change to management for wildlife conservation and ecosystem function. Reallocate the forage previously allocated to grazing use in these allotments to wildlife and ecosystem functions. Pilot Knob was closed in the WEMO plan amendment. The Cronese Lake, Harper Lake, and Cady Mountain allotments were closed as mitigation for the impacts to the Agassiz's desert tortoise resulting from the Fort Irwin expansion. All forage allocated to livestock grazing in these allotments will be reallocated to wildlife use and ecosystem function. The vegetation in the Valley View Allotment, which was previously allocated to livestock, will be reallocated to wildlife use and ecosystem function.
- The following vacant grazing allotments within the CDCA will have all vegetation previously allocated to grazing use reallocated to wildlife use and ecosystem functions and will be closed and unavailable to future livestock grazing: Buckhorn Canyon, Crescent Peak, Double Mountain, Jean Lake, Johnson Valley, Kessler Springs, Oak Creek, Chemehuevi Valley, and Piute Valley.

- Allocate the forage that was allocated to livestock use in the Lava Mountain and Walker Pass Desert allotments (which have already been relinquished under the 2012 Appropriations Act) to wildlife use and ecosystem function and permanently eliminate livestock grazing on the allotments.
- Avoid siting solar developments in active livestock grazing allotments. If a ROW is granted for solar development in an active livestock grazing allotment, prior to solar projects being constructed in active livestock allotments, an agreement must be reached with the grazing permittee/lessee on the 2-year notification requirements. If any rangeland improvements such as, but not limited to, fences, corrals, or water storage projects, are to be impacted by energy projects, reach agreement with the BLM and the grazing permittee/lessee on moving or replacing the range improvement. This includes the costs for NEPA, clearances, and materials.
- In California Condor use areas, wind energy ROWs will include a term and condition requiring the permittee and wind operator to eliminate grazing of livestock.
- Include no surface occupancy stipulation on geothermal leases in active grazing allotments.

II.3.2.3.6 Minerals

The lands within the DRECP contain a vast array of minerals that are vital to the local and national economy. Precious metals such as gold and silver abound in many areas, while Rare Earth Elements, critical components to an ever expanding electronic world, are found principally in just one small area near Mountain Pass. Dry lake beds within the DRECP contain borates and other minerals that help drive the industrial engine of this country. High grade limestone for cement and fillers, and sand and gravel deposits, while fairly ubiquitous, literally form the very foundation of civilization. In this light, it is important that we have access to these resources for now and future generations to come.

II.3.2.3.6.1 Goals and Objectives

This alternative would not amend existing goals and objectives in the current land use plans. In addition to those goals and objectives, the DRECP would include the following goals and objectives:

- Support the national need for a reliable and sustainable domestic mineral and energy supply.
- Support responsible mining and energy development operations necessary for California's infrastructure, commerce and economic well-being.

II.3.2.3.6.2 Conservation and Management Actions

Conservation and Management Actions for the Entire Planning Area

For identified minerals lands and existing mining and energy development (locatable, salable, solid leasable and geothermal minerals) with currently approved Plans of Operations, Notices, Mine and Reclamation Plans or Plans of Development, under the authorities 43 CFR 3200; 3500; 3600; and 3802/09, the mineral resources have been characterized in the following manner in proposed DFAs and Conservation Areas:

High Potential Mineral Areas (identified in CA GEM data)

- These areas have been identified as mineral lands having existing and/or historic mining activity and a reasonable probability of future mineral resource development. These identified areas will be designated as mineral land polygons on DRECP maps, recognized as probable future development areas for planning purposes and allowable use areas.
- If a renewable energy project is proposed in a High Potential Mineral Area, analyze and consider the mineral resource value in the renewable energy project analysis.

Existing Mineral/Energy Operations

- Existing authorized mineral/energy operations, including amendments and requests for expansion on existing operations, will be designated as an allowable use within areas all BLM lands in the Planning Area and unpatented mining claims are subject to valid existing rights.

Existing High Priority Mineral/Energy Operations Exclusion Areas

- Existing high priority operation footprints and their identified expansion areas will be excluded from proposed renewable energy and conservation applications.
- High priority operation exclusions are referenced by name with their respective footprint (acreage) below.
- MolyCorp REE (General Legal Description: 35º 26'N; 115º 29'W)- 10,490.9 surface acres
- Briggs Au, Etna (General Legal Description: 35º 56'N; 117º 11'W)- 3,216.9 surface acres
- Cadiz Evaporites (General Legal Description: 34º 17'N; 115º 23'W)- 2,591.5 surface acres

- Searles Dry Lake (Evaporate) Operation (General Legal Description: 35º 43'N; 117º 19'W)- 72,000 surface acres
- Bristol Dry Lake (Evaporate) Operation (General Legal Description: 34º 29'N; 115º 43'W)- 3,500 surface acres
- Mesquite Gold Mine (General Legal Description: 33º 04'N; 114º 59'W)- 4,500 surface acres
- Hector Mine (Hectorite Clay) (General Legal Description: 34º 45'N; 116º 25'W)- 1,500 surface acres

Access to Existing Operations

- Established access routes to the aforementioned existing authorized operations and areas will be designated as allowable uses within the proposed DFA and conservation area designations.

Areas Located Outside Identified Mineral Areas ("White Areas")

- Areas which could not be characterized due to insufficient data and mineral potential may fluctuate dependent on market economy, extraction technology, and other geologic information- requiring periodic updating.

Conservation and Management Actions in National Conservation Lands and Areas of Critical Environmental Concerns

- In National Conservation Lands, apply the CMAs outlined in Section II.3.2.2.1.1.

High Potential Mineral Areas

- In National Conservation Lands and ACECs, determine if reasonable alternatives exist outside of the National Conservation Lands/ACEC areas prior to proposing mineral resource development within one of these areas.
- In National Conservation Lands, subject to valid existing rights, if mineral resource development is proposed on a parcel of public land administered by the BLM for conservation purposes and designated as part of the NLCS within the CDCA, pursuant to OPLMA Section 2002(b)(2)(D):
    - Identify, analyze, and consider the resources and values for which that parcel of public land is administered for conservation purposes.
    - Determine whether development of mineral resources is compatible with the BLM's administration of that parcel of public land for conservation purposes. If

development is incompatible, the mineral resource would not be developed, subject to valid existing rights.

- In National Conservation Lands, to protect the values for which a National Conservation Land unit was designated, and avoid, minimize, and mitigate impacts to those values, all Plans of Operation will meet the performance standards found at 43 CFR 3809.420, specifically 43 CFR 3809.420(a)(3)—Land-use plans; and 43 CFR 3809.420(b)(7)—Fisheries, wildlife and plant habitat.

II.3.2.3.7 Paleontology

Paleontological resources found on public lands are recognized by BLM as constituting a fragile and nonrenewable scientific record of the history of life on earth and represent an important component of America's natural heritage. BLM manages paleontological resources under the following laws, regulations and policies: BLM Manual 8270, Paleontological Resources Management; BLM Handbook 8270-1, General Procedural Guidance for Paleontological Resources Management; the FLPMA; NEPA; Secretarial Order 3104; the Federal Cave Resources Protection Act of 1988; Archaeological Resources Protection Act of 1979; Antiquities Act of 1906; and other various laws and regulations. This section provides the proposed goals, objectives, and action items for the preferred alternative to manage paleontological resources within the BLM's jurisdiction in the DRECP consistent with these various requirements. Some individual units (SRMA, ACEC, National Conservation Lands) also have additional resource specific and/or more restrictive paleontological resource rules described in those sections.

II.3.2.3.7.1 Goals and Objectives

This alternative would not amend existing goals and objectives in the current land use plans. In addition to those goals and objectives, the DRECP would include the following goals and objectives:

Goals

- Ensure that paleontological resources are given full consideration in land use planning and in management decisions.
- Preserve and protect a representative sample of the full array of the paleontological resources in the DRECP.
- Protect and conserve significant paleontological resources as they are discovered on public lands.
- Manage paleontological resources in ways that prioritize research needs, facilitate educational and recreational needs, and protect important sites.

- Develop specific objectives and management actions for fossil localities, when paleontological resources are discovered in the Planning Area.

Objectives

- Identify sensitive paleontological localities to aid in the project review and design process.
- Develop interpretive materials to correspond with recreational uses to educate public about protecting paleontological resources and avoiding disturbance of sensitive paleontological localities.

II.3.2.3.7.2 Conservation and Management Actions

The following CMAs will apply to the entire Planning Area.

- If not previously available, prepare paleontological sensitivity maps consistent with the Potential Fossil Yield Classification for ROW prior to NEPA analysis.
- Incorporate all guidance provided by the Paleontological Resources Protection Act.
- Ensure proper data recovery of significant paleontological resources where adverse impacts cannot be avoided or otherwise mitigated.
- Due to recent significant discoveries in areas within the Chuckwalla Valley where previous assessments had predicted low sensitivity, require paleontological surveys and construction monitors for large scale projects.

II.3.2.3.8 Recreation and Visitor Services

Visitation to the Planning Area is associated with motorized camping, OHV recreation, hunting, hiking, wildflower and wildlife viewing, bird watching, photography, and commercial uses also occur to a lesser degree. As such, the majority of public lands within the Planning Area have recreation opportunities that can be appropriately managed while conserving natural, biological, and cultural resources as prescribed by the BLM's multiple-use mission and planning documents.

This recreation and visitor services blueprint (based on the BLM National Recreation and Visitor Services program) for the future also sets three primary goals for the BLM recreation program:

1. Improve access to appropriate recreation opportunities on BLM-managed lands.
2. Ensure a quality experience and enjoyment of natural, biological, and cultural resources on BLM-managed lands.

3. Provide for and receive fair value in recreation.

To meet the specific needs and changing demands of recreation visitors and changes in BLM recreation management, a BLM California-specific Recreation and Visitor Services Strategy was completed in 2008 (BLM 2008b). The strategy outlined a framework with specific goals, objectives, and actions to be implemented. The three primary goals of the document were designed to increase public land stewardship through consistent and coordinated management of the BLM California recreation program in order to achieve the best possible balance of recreational uses and land health standards statewide.

The three primary goals are to:

1. Set a framework for achieving sustainable experiences and quality of life outcomes for individuals, communities, and the environment.
2. Sustain diversity, distinctive character, and capacity of BLM recreation settings.
3. Increase the economic stability and sustainability of the BLM California recreation program.

The seven main objectives for BLM recreation management in California are to:

1. Manage for recreation experiences and quality of life.
2. Encourage sustainable travel/tourism collaborations.
3. Fair value and return through fees and commercial services.
4. Establish a comprehensive approach to travel management.
5. Public health and safety and improve accessibility.
6. Enhance and expand visitor services.
7. Encourage and sustain collaborative partnerships.

II.3.2.3.8.1 Goals and Objectives

- **Special Recreation Management Areas (SRMA).** Protect SRMAs for their unique/special recreation values. Manage SRMAs for their targeted recreation activities, experiences and benefits. Maintain (and where possible enhance) the recreation setting characteristics – physical components of remoteness, naturalness and facilities; social components of contact, group size and evidence of use; and operational components of access, visitor services and management controls (refer to recreation setting characteristics matrix). Refer to the individual SRMA documents for SRMA/Recreation Management Zone specific objectives, management actions, and allowable uses.

- **Extensive Recreation Management Area (ERMA).** Support and sustain the principal recreation activities and associated qualities and conditions of the ERMA. Manage ERMAs to address the recreation use, demand, or recreation and visitor services program investments. Refer to the individual ERMA documents for ERMA specific objectives, management actions, and allowable uses.
- Manage lands not designated as SRMAs or ERMAs to meet recreation and visitor services and resource stewardship needs as identified in field office Resource Management Plans. Recreation activities may occur and recreation facilities may exist in these areas.
- **Designated OHV Open Areas.** Protect vehicle access and OHV opportunities as specified in Recreation Area Management Plans and Travel and Transportation Management Plans.
- **Developed Recreation Facilities (BLM FAMS data).** Protect and manage developed recreation facilities within the Planning Area.
    - Level 1 = high value: Campgrounds, Long-Term Visitor Areas, Visitor Contact Facilities, Day Use areas, Watchable Wildlife areas, OHV Open Areas, etc.
    - Level 2 = moderate value: Recreational Trailheads for motorized/non-motorized activities, Parking staging areas
    - Level 3 = lower value: Individual developments—Kiosks, etc.
- Manage the remainder of the non-SRMA resource area within the Planning Area to provide for a variety of dispersed recreation opportunities. Emphasize primitive, semi primitive motorized, semi primitive nonmotorized and roaded natural experiences. Maintain and enhance semi-primitive and other physical settings by providing compatible recreation opportunities within those settings. Manage visitor use to conform with semi-primitive and other physical settings. Recreation management may include developing trails for hiking, mountain biking and horseback riding; providing OHV use opportunities; designating scenic byways; interpreting natural and cultural resources; and establishing an environmental education program.
- Enhance recreation experiences provided to the public through a well-managed Special Recreation Permit program. The Special Recreation Permit program promotes a broad spectrum of recreational experiences that are appropriate to the recreation management setting.

Goals and Objectives Specific to the Bishop RMP

- Manage the Alabama Hills National Scenic Cooperative Management Area to conserve, protect, and enhance for the benefit and enjoyment of present and future

generations the nationally significant scenic, cultural, recreational, geological, educational, biological, and scientific resources of the Alabama Hills.

II.3.2.3.8.2 Conservation and Management Actions

Conservation and Management Actions for the Entire Planning Area

- Maintain, and where possible enhance, the recreation setting characteristics – physical components of remoteness, naturalness and facilities; social components of contact, group size and evidence of use; and operational components of access, visitor services and management controls.
- Cooperate with the network of communities and recreation service providers active within the planning area to protect the principal recreation activities and opportunities, and the associated conditions for quality ~~of~~ recreation, by enhancing appropriate visitor services, and by identifying and mitigating impacts from development, inconsistent land uses and unsustainable recreation practices.
- Manage lands not designated as SRMAs or ERMAs to meet recreation and visitor services and resource stewardship needs as described in Resource Management Plans.
- Prohibit large-scale ground disturbing activities that do not enhance conservation and recreation values within one mile of Level 1 and Level 2 Recreation facility footprint.
- Avoid large-scale ground disturbance within one-half mile of Level 3 Recreation facility footprint. If avoidance isn't practicable, the facility must be relocated to the same or higher standard and maintain recreation objectives and setting characteristics.
- Limit signage to that necessary for recreation facility/area identification, interpretation, education and safety /regulatory enforcement.
- Refer to local RMPs, RMP amendments, and activity level planning for specially designated areas for Vehicular Stopping, Parking, and Camping limitations.
- Provide on-going maintenance of recreation and conservation facilities, interpretive and regulatory signs, roads, and trails.

Conservation and Management Actions in Development Focus Areas and DRECP Variance Lands, Future Assessment Areas, and Special Analysis Areas

- Retain, to the extent possible, the identified recreation setting characteristics: physical components of remoteness, naturalness and facilities; social components of contact, group size and evidence of use; and operational

components of access, visitor services and management controls (see recreation setting characteristics matrix).

- Designate SRMAs as exclusion areas for renewable energy development due to the incompatibility with the values of the SRMA. Two exceptions to this management action are: (1) geothermal development is an allowable use if a geothermal-only DFA overlays the SRMA designation and the lease includes a "no surface occupancy" stipulation; and (2) if a DRECP variance land designation overlays the SRMA, renewable energy may be allowed on a case-by-case basis if the proposed project is found to be compatible with the specific SRMA values.
- **Hot Springs, Tamarisk, Pilot Knob, Ocotillo Wells SRMAs:** No renewable energy development will be allowed except for geothermal development with no surface occupancy stipulations. Refer to the individual SRMA documents for SRMA/Recreation Management Zone specific objectives, management actions, and uses. Refer to the Memorandum of Understanding (MOU) between the Department of Interior and California State Parks for agreed upon geothermal development zones.
- **ERMAs:** Retain to the extent possible recreation activities and associated qualities and conditions within these areas.
- **Non-SRMA/ERMA**: Retain to the extent possible recreation activities provided for in field office RMPs.

Mitigation Measures

If impacts to recreation setting characteristics identified in RMPs, or activity plans for designated recreation areas (SRMA, ERMA, OHV Areas, etc.), from proposed projects or developments are identified, one or more of the following mitigation measures will be applied:

- For displacement of dispersed recreation opportunities, commensurate compensation in the form of enhanced recreation operations, recreation facilities or opportunities will be required. If recreation displacement results in resource damage due to increased use in other areas, mitigate that damage through whatever measures are most appropriate as determined by the Field Office.
- Where development displaces facilities, similar new recreation facilities/campgrounds (including the installation of new structures including pit toilets, shade structures, picnic tables, installing interpretive panels, etc.), will be provided.
- If designated vehicle routes adjacent to SRMAS or adjacent to/within ERMAs are directly impacted by renewable energy development activities (includes

modification of existing route to accommodate industrial equipment, restricted access or full closure of designated route to the public, etc.), mitigation will include the development of alternative routes to allow for continued vehicular access, with a similar recreation experience, adjacent/throughout the SRMA/ERMA. In addition to continued access throughout the SRMA/ERMA, mitigation will also include the construction of an "OHV touring route" which circumvents the renewable energy development project area and allows for interpretive signing materials to be placed at strategic locations along the route.

- Impacts to Special Recreation Permit activities will be mitigated by providing necessary planning/NEPA compliance documentation for replacement activities.
- SRMA—If residual impacts to SRMAs occur from renewable energy development, or other development or project impacts, commensurate mitigation through relocation or replacement of facilities or compensation (in the form of a recreation operations and enhancement fund) will be required.
- ERMA—Impacts from development projects that do not enhance conservation or recreation goals will require commensurate mitigation through relocation or replacement of facilities.

Conservation and Management Actions in National Conservation Lands, Areas of Critical Environmental Concern, and Wildlife Allocations

- Refer to the individual National Conservation Areas and ACEC Special Unit Management Plans in Appendix L for specific objectives, management actions and uses. Where ACECs overlap SRMAs, refer to SRMA Special Unit Management Plans in Appendix L also. Where guidance conflicts in these overlap areas, National Conservation Areas/ACEC guidance will prevail.
- Maintain targeted recreation activities, experiences and benefits. Maintain, and where possible enhance, the recreation setting characteristics: physical components of remoteness, naturalness and facilities; social components of contact, group size and evidence of use; and operational components of access, visitor services and management controls.
- Design public access features (access roads, roadside stops, trailheads, interpretive sites, etc.) to support or enhance conservation values for National Conservation Land units.

Conservation and Management Actions in Special Recreation Management Areas

- Protect SRMAs for their unique/special recreation values by prohibiting utility-scale renewable energy development. Refer to the individual SRMA Special Unit

Management Plans in Appendix L for SRMA/Recreation Management Zone specific objectives, management actions, allowable uses, and specific mitigation requirements.

- Manage SRMAs for their targeted recreation activities, experiences and benefits. Maintain (and where possible enhance) the recreation setting characteristics – physical components of remoteness, naturalness and facilities; social components of contact, group size and evidence of use; and operational components of access, visitor services and management controls.

II.3.2.3.9 Soil, Water, and Water-Dependent Resources

The Planning Area contains many soil types, as might be expected in a zone which spans the transition from low desert to rocky desert mountains. This variety of soil types is the result of diversity in parent material, relief, climate, living organisms, and age of the soils. It is important to maximize the ability of these various soils to maintain their functional biological and physical characteristics. Soil types of key concern, some that are unique to these desert environments, include sand dunes, desert pavement, carbonate soils, hydric soils that support wetland habitats, and highly erosive soils.

While the CDCA Plan discussed soils in Chapter 6 and in Appendix XI of the accompanying FEIS, neither document established goals for soil resources. Instead, standard BMPs are currently used to protect soil resources. Among the reference guides listing these BMPs is the BLM (2007) publication *Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development*, commonly referred to as the Gold Book, last updated in 2007.

Water is a scarce resource across the Planning Area. Consumptive use by renewable energy projects is generally necessary, with applications including dust control, cleaning of project components, and cooling. These uses, however, may compete with the needs of natural resources such as vegetation, animals, aesthetics, and other users. The primary goal for surface water management is to ensure that waters continue to perform key hydrologic and biogeochemical functions that safeguard water quality and quantity. The primary goal for groundwater management is to maintain safe yield conditions, avoiding the creation or exacerbation of overdraft conditions that result in adverse impacts to other resources.

Surface waters in the Planning Area can be divided into watersheds, or portions of the landscape that collect runoff from the surface, concentrate it into channels, and conduct the resulting flow to a definable location. Many watersheds within the Southern California desert are endorheic; that is, they do not have outlets, but drain internally toward their centers, typically onto dry lake beds called “playas.” The most famous of these is Death Valley, which drains to a playa at Badwater. Groundwater basins are defined by aquifers (underground rock formations saturated with water) which may or may not correlate to the surface water watersheds. Aquifers also generally have a flow direction and can be

characterized by the same calculations used for surface flow. Key surface water resources in the Planning Area include the Mojave River, the Amargosa River, ephemeral waterways, and hundreds of springs and seeps. The Colorado River is also a critical water source for most of Southern California, and pumping from its tributary groundwater basins within the Plan Area may adversely impact downstream users and resources. All groundwater resources can be considered key; in many of the desert basins, groundwater is the only water source. Some surface water basins are supplied by tributary groundwater basins in the desert; for example, the perennial sections of the Amargosa and Mojave Rivers depend on groundwater flow reaching the surface. Recognizing the interdependence of this relationship is crucial to appropriate management of desert water resources.

Usage of surface water and groundwater resources is primarily governed by California state water law, which also implements relevant portions of the Federal Water Pollution Control Act (Clean Water Act [CWA] Public Law 92-500, as amended; 33 U.S.C. 1251 et seq.). Federally reserved water rights, however, generally apply to all water needs related to the reservation of federal lands. The BLM and other federal agencies work in cooperation with the California State Water Resources Control Board, CDFW under California Fish and Game Code Section 1600, and the California Department of Water Resources regarding management of water resources.

The objective of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of the nation's waters (Section 101a). Under Sections 401 and 404, the CWA regulates point-source and non-point-source pollution.

The groundwater resources beneath federally managed lands are primarily the responsibility of those agencies managing the land, except where a local jurisdiction has been established or a basin adjudication has occurred through court action.

II.3.2.3.9.1 Goals and Objectives

This alternative would not amend existing goals and objectives in the current land use plans, including the relevant CDCA standards and guidelines listed in the CMAs section of the Livestock Grazing section above (Section II.3.2.3.5.2). However, in this alternative, the DRECP would add the following goals and objectives:

Soil Resources

Goals

- Avoid accelerated rates of soil erosion and loss of habitat and habitat productivity resulting from soil erosion.

- Where soils currently exhibit functional biological and physical characteristics that are appropriate to soil type, climate, and land form, minimize disturbance that could compromise these characteristics.

Objectives

- To the extent possible, avoid disturbance of desert pavement, biologically intact soil crusts, and highly erodible soils (via wind or water).
- Minimize soil disturbances to reduce flooding potential; maintain natural infiltration rates, wildlife habitat, and soil health; and reduce wind and water erosion potential.
- Manage soils to meet or exceed the relevant Soil Standards of Rangeland Health, as indicated by ground or plant cover, diversity of plant species, minimal evidence of accelerated wind and water erosion, and the presence of well-developed and old-growth biological soil crusts where appropriate.
- Implement relevant best management practices and other measures to comply with design features required in the Solar and Wind Final PEISs. Required soil resource design features for solar projects are listed in the Solar PEIS ROD in Appendix A.2.2.8.

Surface Water Resources

- **Goal:** Ensure that any surface waters continue to perform key hydrologic and biogeochemical functions that may affect water quality.

Objectives

- Surface water flows that are dependent upon groundwater, as well as their source aquifers, will remain intact and functional via the maintenance of adequate flow and water table elevations needed for water-dependent resources.
- Water dependent vegetation, including groundwater-dependent microphyll woodlands, mesquite bosques, and riparian vegetation associated with perennial and intermittent streams, will remain in place to provide a natural buffer for minimizing adverse impacts to water quality by removing pollutants and sediment from surface runoff.
- Truncation, realignment, channelization, lining, or filling of perennial, intermittent, and ephemeral surface water resources will be minimized or eliminated where such actions could reduce any available riparian habitat, eliminate the natural buffer system for filtering runoff, or change a stream's hydrology by decreasing water storage capacity or increasing water flow velocity.

- Dry wash morphology, function, and evolution will be maintained to ensure continuity of ecological processes for meeting identified conservation objectives.
- Relevant best management practices and other adaptive measures will be implemented to comply with design features required in the Solar and Wind Final PEISs. Required surface water resource design features for solar projects are listed in the Solar PEIS ROD in Appendices A.2.2.10 and A.2.2.11.

Groundwater Resources

- **Goal:** Manage the use of groundwater to avoid the creation or exacerbation of overdraft conditions and the potential to cause negative impacts to the aquifers.

Objectives

- Do not authorize consumptive groundwater production (or beneficial use) from an identified groundwater basin to exceed the estimated safe yield of that basin.
- Avoid groundwater withdrawals that have direct and indirect effects on groundwater-dependent habitats including aquatic, wetland, playa, microphyll woodland, and riparian habitats.
- Mitigate unavoidable impacts to groundwater-dependent habitats due to groundwater extraction through offsetting actions that achieve neutral or positive effects on these habitats to the extent possible.
- Implement relevant best management practices and other measures to comply with design features required in the Solar and Wind Final PEISs. Required groundwater resource design features for solar projects are listed in the Solar PEIS in Appendix A.2.2.10.

II.3.2.3.9.2 Conservation and Management Actions

Conservation and Management Actions Common to the Entire Planning Area

General

- Stipulations or conditions of approval for any project will be imposed that provide appropriate protective measures to protect the quantity and quality of all water resources (including ephemeral, intermittent, and perennial water bodies) and any associated riparian habitat. These water resources will be identified through the analysis associated with the issuance of the authorization, or approval of the plan of development.

- Any buffer zones, riparian setbacks, no-development areas, etc., identified as appropriate to a particular feature or resource, will be determined on a site-specific basis, and will be consistent with the plan decision to protect these resources as appropriate. In general, placement of permanent facilities within buffers or protected zones will be discouraged, but may be permitted if water and riparian resource management objectives can be maintained.

Groundwater Resources

- Exceptions: Exceptions to any of these stipulations, as well as those listed below under the subheadings "Soil Resources," "Surface Water," and "Groundwater Resources," may be granted by the authorized officer if the operator submits a plan that demonstrates:
  - The impacts from the proposed action are temporary;
  - The impacts are minimal (e.g., impact less than 5% of the mapped resource within the project ROW) or can be adequately mitigated; *and*
  - Critical resources, including threatened and endangered species, are fully protected.
- Modifications: No modifications will be granted.
- Waivers: No waivers will be granted.

Soil Resources

- Limit disturbance of sand flow corridors and sand dunes so that no more than 5% of the sand flow corridors and sand dunes within a proposed project footprint is disturbed for construction
- The extent of desert pavement within the proposed project right of way shall be mapped. Limit disturbance of desert pavements so that no more than 20% of the desert pavements within a proposed project footprint will be disturbed during construction.
- The extent of additional sensitive soil areas (cryptobiotic soil crusts, hydric soils, highly corrosive soils, expansive soils, and soils at severe risk of erosion) shall be mapped. Limit disturbance of sensitive soil areas (e.g., cryptobiotic soil crusts), so that no more than 20% of the sensitive soil areas within a proposed project footprint will be disturbed during construction.
- Where possible, side casting shall be avoided where road construction requires cut-and-fill procedures.

Surface Water

- Exclusion areas will be established in all wetlands, riparian areas (seeps, springs, perennial and intermittent streams), playas (dry lake beds), and Wild and Scenic River corridors.
- Section 404 and 401 of the CWA will be complied with for dry washes within the proposed ROW that have been or will likely be determined to be jurisdictional waters.
- Section 402 of the CWA will be complied with for any activity that is determined to be a point source of pollution.
- Within all zones except military lands, long-term impacts to desert riparian woodlands will be limited to 5% of the total mapped acreage of this vegetative type.
- If desert riparian woodlands are permanently impacted, they must be mitigated through compensatory mitigation at a 5:1 ratio.
- Height restrictions on technology will be considered in order to mitigate impacts associated with wildlife use of riparian areas and wetlands (e.g., power tower technology may not be allowed in migratory flyways frequented by waterfowl).
- All riparian areas will be maintained at, or brought to, proper functioning condition.
- All relevant requirements of Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) will be complied with.
- The 100-year floodplain boundaries for any surface water feature in the vicinity of the project will be identified. If maps are not available from the Federal Emergency Management Agency (FEMA), these boundaries will be determined via hydrologic modeling and analysis as part of the environmental review process. Construction within, or alteration of, 100-year floodplains will be avoided where possible, and permitted only when all required permits from other agencies are obtained.

Groundwater Resources

For any project that proposes to utilize groundwater resources, the following stipulated CMAs shall apply, regardless of project location:

- A project's groundwater extraction shall not contribute to exceeding the estimated perennial yield for the basin in which the extraction is taking place. Perennial yield is that quantity of groundwater that can be withdrawn from the groundwater basin without exceeding the long-term recharge of the basin or unreasonably affecting the basin's physical and chemical integrity. It is further clarified arithmetically below.

- Water extracted or consumptively used for the construction, operation, maintenance, or remediation of the project shall be solely for the beneficial use of the project or its associated mitigation and remediation measures, as specified in approved plans and permits.
- If possible, all unavoidable impacts on surface waters shall be mitigated to ensure no net loss of function and value, as determined by the Coordination Group, as the result of project implementation.
- Consideration shall be given to design alternatives that maintain the existing hydrology of the site or redirect excess flows created by hardscapes and reduced permeability from surface waters to areas where they will dissipate by percolation into the landscape.
- All hydrologic alterations shall be avoided that could reduce water quality for all applicable beneficial uses associated with the hydrologic unit in the project area, or specific mitigation measures shall be implemented that will minimize unavoidable water quality impacts, as determined by the Coordination Group. These beneficial uses may include municipal, domestic, or agricultural water supply; groundwater recharge; surface water replenishment; recreation; water quality enhancement; flood peak attenuation or flood water storage; and wildlife habitat. A Water (Groundwater) Supply Assessment shall be prepared prior to project certification or authorization. This assessment must be approved by the Coordination Group prior to the development, extraction, injection, or consumptive use of any water resource. The purpose of the Water Supply Assessment is to determine whether over-use or over-draft conditions exist within the project basin(s), and whether the project creates or exacerbates these conditions. The Assessment shall include an evaluation of existing extractions, water rights, and management plans for the water supply in the basin(s) (i.e., cumulative impacts), and whether these cumulative impacts (including the proposed project) can maintain existing land uses as well as existing aquatic, riparian, and other water-dependent resources within the basin(s). This assessment shall identify:
    - All relevant groundwater basins or sub-basins and their relationships.
    - All known aquifers in the basin(s), including their dimensions, whether confined or unconfined, estimated hydraulic conductivity and transmissivity, groundwater surface elevations, and direction and movement of groundwater.
    - All surface water basin(s) related to water runoff, delivery, and supply, if different from the groundwater basin(s).
    - All sites of surface outflow (springs or seeps) contained within the basin(s), including historic sites.

- All other surface water bodies in the basins(s), including rivers, streams, ephemeral washes/drainages, lakes, wetlands, playas, and floodplains.
- The water requirements of the proposed project and the source(s) of that water.
- An analysis demonstrating that water of sufficient quantity and quality is available from identified source(s) for the life of the project.
- An analysis of potential project-related impacts on water quality and quantity needed for beneficial uses, reserved water rights, or habitat management within or down gradient of the groundwater basin within which the project would be constructed.

The primary product of the Water Supply Assessment shall be a baseline water budget, which shall be established based on the best-available data and hydrologic methods for the identified basin(s). This water budget shall classify and describe all water inflow and outflow to the identified basin(s) or system using best-available science and the following basic hydrologic formula or a derivation:

$$P - R - E - T - G = \Delta S$$

where P is precipitation and all other water inflow or return flow, R is surface runoff or outflow, E is evaporation, T is transpiration, G is groundwater outflow (including consumptive component of existing pumping), and ΔS is the change in storage. The volumes in this calculation shall be in units of either acre-feet per year or gallons per year. The water budget shall quantify the existing perennial yield of the basin(s). Perennial yield is defined arithmetically as that amount such that

$$P - R - E - T - G \geq 0$$

Water use by groundwater-dependent resources is implicitly included in the definition of perennial yield. For example, in many basins the transpiration component (T) includes water use by groundwater-dependent vegetation. Similarly, groundwater outflow (G) includes discharge to streams, springs, seeps, and wetlands. If one or more budget components is altered, then one or more of the remaining components must change for the hydrologic balance to be maintained. For example, an increase in the consumptive component of groundwater pumping can lower the water table and reduce transpiration by groundwater-dependent vegetation. The groundwater that had been utilized by the groundwater-dependent vegetation would then be considered "captured" by groundwater pumping. Similarly, increased groundwater consumption can capture groundwater that discharges to streams, springs, seeps, wetlands and playas. These changes can occur slowly over time, and may require years or decades before the budget components are fully adjusted. Accordingly, the water/groundwater supply assessment requires that the best-available data and hydrologic methods be employed to quantify these

budgets, and that groundwater consumption effects on groundwater-dependent ecosystems be identified and addressed.

The water/groundwater supply assessment shall also address:

- Estimates of the total cone of depression considering cumulative drawdown from all potential pumping in the basin(s), including the project, for the life of the project through the decommissioning phase.
- Potential to cause subsidence and loss of aquifer storage capacity due to groundwater pumping.
- Potential to cause injury to other water rights, water uses, and land owners.
- Changes in water quality and quantity that affect other beneficial uses.
- Effects on groundwater dependent vegetation and groundwater discharge to surface water resources such as streams, springs, seeps, wetlands, and playas that could impact biological resources, habitat, or are culturally important to Native Americans.
- Additional field work that may be required, such as an aquifer test, to evaluate site specific project pumping impacts and if necessary, establish trigger points that can be used for a Groundwater Water Monitoring, Management, and Mitigation Plans.
- The mitigation measures required, if there are significant or potentially significant impacts on water resources, that include but are not limited to, the use of specific technologies, management practices, retirement of active water rights, development of a recycled water supply, or water imports.

- A Groundwater Monitoring and Reporting Plans, and Mitigation Action Plans shall be prepared to verify the Water Supply Assessment and adaptively manage water use as part of project operations. This plan shall be approved by the Coordination Group prior to the development, extraction, injection, or consumptive use of any water resource. The quality and quantity of all surface water and groundwater used for the project shall be monitored using this plan. Groundwater monitoring includes measuring the effects of groundwater extraction on groundwater surface elevations, groundwater flow paths, changes to groundwater-dependent vegetation, and of aquifer recovery after project decommissioning. Surface water monitoring, if applicable, shall monitor changes in the flows, water volumes, channel characteristics, and water quality. Monitoring frequency and geographic scope shall be decided on a site-specific basis and in coordination with the appropriate agencies that manage the water resources of the region. The geographic scope will include at the very least, all basins/sub-basins that potentially receive inflow from the basin where the proposed project may be sited, and all basins/sub-basins that may

potentially contribute inflow to the basin where the proposed project is located. The plan shall also detail any mitigation measures that may be required as a result of the project. This plan and all monitoring results shall be made available to the Coordination Group.

- Where groundwater extraction has potential to exceed the basin's perennial yield or has the potential to impact water resources, one or more "trigger points," or specified groundwater elevations in specific wells, shall be established by the Authorizing Officer, where additional mitigation measures would be imposed if the groundwater elevation at the designated monitoring wells falls below the trigger point(s)(or exceeds the trigger).
- Groundwater pumping mitigation shall be imposed if groundwater monitoring data indicate impacts on water-dependent resources that exceed those anticipated and otherwise mitigated for in the NEPA analysis and ROD, even if the basin's perennial yield is not exceeded. Water-dependent resources include riparian or phreatophytic vegetation, springs, seeps, streams, and other approved domestic or industrial uses of groundwater. Mitigation measures may include changes to pumping rates, volume, or timing of water withdrawals; coordinating and scheduling groundwater pumping activities in conjunction with other users in the basin; acquisition of project water from outside the basin; and/or replenishing the groundwater resource over a reasonably short timeframe.
- Water-conservation measures shall be required in basins where current groundwater demand is high and has the future potential to rise above the estimated perennial yield (e.g., Pahrump Valley). These measures may include the use of specific technology, management practices, or both. A detailed discussion and analysis of the effectiveness of mitigation measures must be included. Application of these measures shall be detailed in the Groundwater Monitoring and Reporting Plan, and the Mitigation Action Plan.
- Groundwater extractions from adjudicated basins, such as the Mojave River Basin, may be subject to additional restrictions imposed by the designated authority; examples include the Mojave Water Agency and San Bernardino County (see County Ordinance 3872). Where provisions of the adjudication allow for acquisition of water rights, project developers could be required to retire water rights at least equal in volume to those necessary for project operation or propose an alternative offset based on the conditions unique to the adjudicated basin.
- Projects shall comply with local requirements for any permanent or temporary domestic water use and wastewater treatment.

- The siting, construction, operation, maintenance, remediation, and abandonment of all wells shall conform to specifications contained in the California Department of Water Resources Bulletins #74-81 and #74-90 and their updates.
- The Colorado River Accounting Surface Method, as defined in USGS SIR 2008-5113 and updates, and ordered in the Consolidated Decree by the United States Supreme Court in Arizona v. California, 547 U.S. 150 (2006), shall be the accepted method of determining whether project-related pumping denies the Colorado River of water which it would otherwise receive from its tributary basins. If project-related groundwater drawdown below the Accounting Surface is expected in a basin whose groundwater is tributary to the Colorado River, and all or a portion of that project is on BLM-managed land, that consumption shall be considered subject to the Law of the River (Colorado River Compact of 1922 and amendments). In such cases, BLM shall require the applicant to offset or otherwise mitigate the volume of water causing drawdown below the accounting surface. Details of such mitigation measures and the right to the use of water shall be described in the Water Monitoring, Management, and Mitigation Plan.

Soil, Water, and Water-Dependent Resources CMAs Restricted to Specific Areas on BLM Lands

- **Stipulations for groundwater development in the proximity of Devils Hole**: Any development scenario within 25 miles of Devils Hole shall include a plan to achieve *zero-net* or *net-reduced* groundwater pumping to reduce the risk of adversely affecting senior federal reserved water rights, the designated critical habitat of the endangered Devils Hole pupfish, and the free-flowing requirements of the Wild and Scenic Amargosa River. This plan will require operators to acquire one or more minimization water rights (MWRs) in the over-appropriated, over-pumped, and hydraulically connected Amargosa Desert Hydrographic Basin in Nevada. The MWR(s) shall be: (1) an amount equal (at minimum) to that which is needed for construction and operations; (2) historically fully utilized, preferably for agricultural use; and (3) senior, or closer to Devils Hole than the proposed point of diversion. The MWR(s) shall be retained by the operator for at least five years, during which stakeholders will have the opportunity to demonstrate that development of the MWR(s) will not lead to water level declines in Devils Hole. If a consensus between DOI agencies and these stakeholders is not reached within five years, the MWR(s) shall be cancelled by the operator.
- **Stipulations for groundwater development in the Calvada Springs/South Pahrump Valley DFA:** Developers in this DFA shall be required to acquire one or more MWRs in the Pahrump Valley Hydrographic Basin in Nevada. The acquired MWR(s) must: (1) be at least equal to the amount proposed to be required and

actually used for project construction and operations; and (2) be fully utilized for at least the prior ten years.

- **Stipulations for development in the vicinity of Death Valley National Park, Joshua Tree National Park, or Mojave National Preserve:** Project proponents shall analyze and address any potential impacts which their projects may have on Death Valley National Park, Joshua Tree National Park, or Mojave National Preserve. BLM will consult with the National Park Service on this process. The analysis or analyses shall include:
    - Potential impacts on the water balances of groundwater basins within these parks and preserves.
    - A map identifying all potentially impacted surface water resources in the vicinity of the project, including a narrative discussion of the delineation methods used to discern those surface waters in the field.
    - Any project-related modifications to surface water resources, both temporary and permanent.
    - Analysis of any potential impacts on perennial streams, intermittent streams, and ephemeral drainages that could negatively impact natural riparian buffers.
    - Impacts of any project proposed truncation, realignment, channelization, lining, or filling of surface water resources that could change drainage patterns, reduce available riparian habitat, decrease water storage capacity, or increase water flow velocity or sediment deposition, in particular where stormwater diverted around or through the project site is returned to natural drainage systems downslope of the project.
    - Any potential indirect project-related causes of hydrologic changes that could exacerbate flooding, erosion, scouring, or sedimentation in stream channels.
    - Alternatives and mitigation measures proposed to reduce or eliminate such impacts.
- **Exceptions:** No exceptions will be granted.
- **Modifications:** No modifications will be granted.
- **Waivers:** No waivers will be granted.

II.3.2.3.10 Special Vegetation Features

Creosote Rings, Yucca Clones and Saguaro Cactus are considered special vegetation features by BLM. These resources constitute a fragile and unique nonrenewable feature on the landscape.

II.3.2.3.10.1 Goals and Objectives

- Ensure that special vegetative resources are given consideration in land use planning and in management decisions.
- Preserve and protect larger features on the landscape. Protect and conserve significant special vegetative resources as they are discovered on public lands.
- Manage special vegetative resources in ways that prioritize research needs, facilitate educational and recreational needs, and protect important individual sites.
- Develop specific objectives and management actions for individual localities, when special vegetative features are discovered in the Planning Area.
- Identify special vegetative features localities to aid in the project review and design process.
- Develop interpretive materials to correspond with recreational uses to educate public about protecting special vegetative features and avoiding disturbance of individual localities.

II.3.2.3.10.2 Conservation and Management Actions

Conservation and Management Actions for the Entire Planning Area

- For project-specific NEPA analysis, a map delineating potential sites of these vegetation features is required.
- Yucca Clones larger than 3 meters in diameter (longest diameter if the clone forms an ellipse rather than a circular ring) shall be avoided.
- Creosote Rings larger than 5 meters in diameter (longest diameter if the "ring" forms an ellipse rather than a circle) shall be avoided.
- Saguaro cactus should be managed in such a way as to provide long-term habitat for the California populations not just individual plants.

II.3.2.3.11 Vegetation

This section is for general vegetation management. It includes disposal of vegetative resources through the Vegetation Use Authorization program.

II.3.2.3.11.1 Conservation and Management Actions

Conservation and Management Actions for the Entire Planning Area

- Management of cactus, yucca and other succulents will adhere to current policy.

- Promote appropriate levels of dead and downed wood on the ground, outside of campground areas to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion.
- Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.
- Within the Bishop Field Office area, provide yearlong protection of endangered, threatened, candidate, and sensitive plant and animal habitats. Yearlong protection means that no discretionary actions which would adversely affect target resources would be allowed except in DFAs

Conservation and Management Actions for Development Focus Areas and Study Area Lands

- Vegetative Use Authorizations: Allow for the commercial collection of seed in DFAs and designated OHV Open Areas. CMA's within those areas will apply to this kind of activity.

Vegetative Use Authorizations

- Consider disposal of succulents through public sale per Policy.

II.3.2.3.12 Visual Resources Management

The vast open vistas and stark landscapes of the California desert are important attributes that the public is concerned with protecting. The landscapes have been inventoried using BLM's Visual Resource Inventory (VRI) classification system, which is discussed in Volume III. Through the DRECP process, BLM is designating VRM Classes to all public lands in CDCA. Other parts of the Planning Area have been assigned VRM Classes through previous plans. Each VRM Class allows for landscape changes from management activities and use authorizations that contrast at different levels with the existing characteristic landscapes. In all situations, actions are taken to minimize visual contrasts through careful project design. Note that VRM Class objectives provide one of many parameters for the management and conservation of public land values (including visual values). Therefore, just because a given project meets the VRM objectives, does not mean that it will be permitted if other plan objectives preclude it development.

II.3.2.3.12.1 Goals and Objectives

VRM Class Definitions

- Class I: The objective of this class is to preserve the existing character of the landscape. This class allows for natural ecological changes and only very limited

management activities and uses. Any contrasts with the natural landscape must be minimal and not attract attention. This class is typically limited to designated Wilderness, Wilderness Study Areas, or wild and scenic river segments with a "Wild" classification.

- Class II: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities and uses can be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture in the predominant natural features of the characteristic landscape.
- Class III: The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape can be moderate. Management activities and uses may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements of the predominant natural features of the landscape.
- Class IV: The objective of this class is to allow for management activities and uses requiring major modifications to the natural landscape. The level of change to the characteristic landscape can be high. Management activities and uses may dominate the view and be a major focus of viewer attention. However, every attempt should be made to mitigate the impacts of activities through careful location and repeating the visual elements of the landscape.

Figure II.3-5 shows the VRM Classes under the preferred alternative.

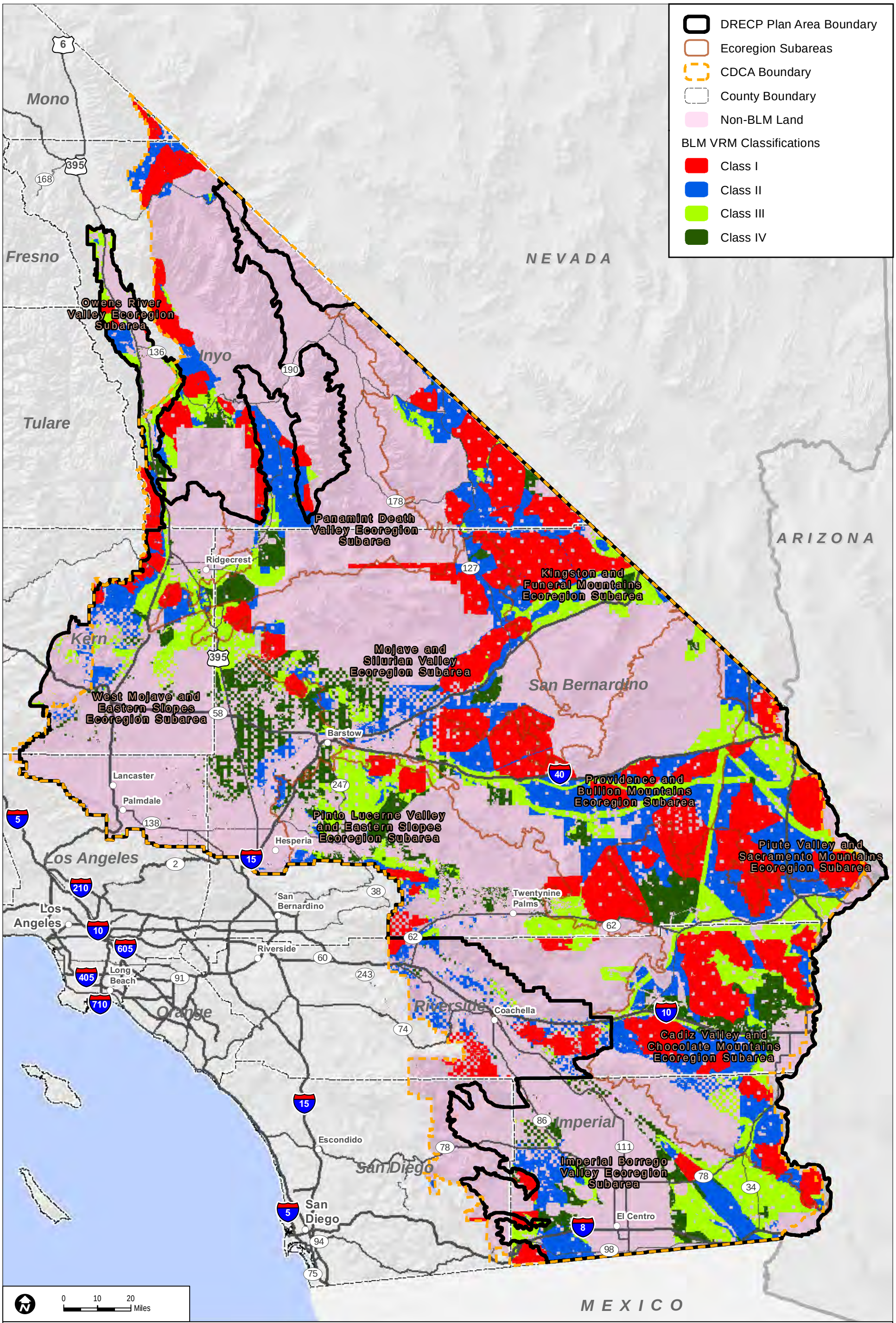
II.3.2.3.12.2 Conservation and Management Actions

Conservation and Management Actions for the Entire Planning Area

- Ensure that development within each of the VRM Class polygons meets the VRM objectives described above as measured through a visual contrast rating process.

Ensure that transmission facilities are designed and located to meet the VRM Class objectives for the area in which they are located. Transmission lines routed through approved corridors where they do not meet VRM Class Objectives will require RMP amendments to establish a conforming VRM Objective. All reasonable effort must be made to reduce visual contrast of these facilities in order to meet the VRM Class before pursing RMP amendments. This includes changes in routing, using lattice towers (vs. monopole), color treating facilities using an approved color from the BLM Environmental Color Chart CC-001 (dated June, 2008 or June, 2013) (vs. galvanized) on towers and support facilities, and employing other BMPs to reduce contrast. Such efforts will be retained even if an RMP amendment is determined to be needed. Visual Resource BMPs that reduce adverse visual contrast will be applied in VRM Class conforming situations. For a reference of BMPs for

reducing visual impacts see the *Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands,* available at http://www.blm.gov/style/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION_/energy/renewable_references.Par.1568.File.dat/RenewableEnergyVisualImpacts_BMPs.pdf



Sources: ESRI (2014); CEC (2013); BLM (2013); CDFW (2013); USFWS (2013)

FIGURE II.3-5

Preferred Alternative – BLM Visual Resource Management Classes

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Conservation and Management Actions for Development Focus Areas and Study Area Lands

- Manage all DFAs as VRM Class IV to allow for industrial scale development. Employ best management practices to reduce visual contrast of facilities.
- Manage all variance lands as VRM Class III.
- Require development to incorporate visual design standards and include latest BMPs (from Solar, Wind, West Wide Energy Corridor, and Geothermal PEISs, the Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands and other programmatic BMP documents).
- Encourage development in a planned fashion within DFAs (e.g. similar to the planned unit development concept used for urban design – i.e. in-fill vs. scattered development, use of common road networks, Generator Tie Lines etc., use of similar support facility designs materials and colors etc.) to avoid industrial sprawl.
- Require regional mitigation for visual impacts for public lands outside of DFAs but open to consideration for energy development (variance lands etc.). Mitigation will be based on the VRI class and the underlying visual values (scenic quality, sensitivity, and distance zone) for the development area as it stands at the time the ROD is signed for the DRECP. Compensation may involve reclamation of visual impacts that are present within other areas designated as BLM VRM Class I or II lands (so that they are no longer visible in the long-term), mitigation on BLM lands inventoried as having equal to or greater visual resource values, or amending RMP for lands located within VRM Class III or IV to a higher level of protection (VRM Class I or II) for areas that are visually intact with no cultural modifications and have visual resource inventoried values that are equal to or greater in value and place a protective Visual ACEC delineated around the compensatory mitigated area. The following mitigation ratios will be applied:
- VRI Class II 2:1 ratio
- VRI Class III 1:1 ratio
- VRI Class IV no mitigation required
- Require compensatory mitigation on public lands developed within DFAs at one-half the level of lands outside of DFAs
    - VRI Class II 1:1 ration
    - VRI Class III 1/2 : 1 ratio
    - VRI Class IV, no mitigation required

Require additional mitigation requirements where projects affect viewsheds of specially designated areas (e. g. national scenic and historic trails, National Parks, etc.) and are discussed under those programs.

Required Visual Resource BMPs. All development within and outside the DFAs will abide by the BMPs addressed in the *Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*, including, but not limited to the following:

- Transmission.
- Color-treat monopoles Shadow Gray per the BLM Environmental Color Chart CC001 unless a more effective color choice is selected by the local Field Office VRM specialist.
- Lattice towers and conductors will have non-specular qualities.
- Lattice Towers will be located a minimum of ¾ miles away from Key Observation Points such as roads, scenic overlooks, trails, campgrounds, navigable rivers and other areas people tend to congregate and located against a landscape backdrop when topography allows.
- Solar – Color treat all facilities Shadow Gray from the BLM Environmental Color Chart CC001 unless a more effective color is selected by the Field Office VRM specialist, including but not limited to:
- Concentrated solar thermal parabolic trough panel backs,
- solar power tower heliostats,
- solar power towers,
- cooling towers,
- Power blocks
- Wind – Color treat all facilities Shadow Gray with the exception of the wind turbine and towers 200 vertical feet or more.
- Night Sky – BMPs to minimize impacts to night sky including light shielding will be employed.

Conservation and Management Actions in Areas of Critical Environmental Concern and Special Recreation Management Areas

- Manage Alabama Hills SRMA and Manzanar ACEC to conform to VRM Class II standards.

II.3.2.3.13 Wild Horses and Burros

Wild Horses and Burros are a resource managed and protected under the Wild Free-Roaming Horses and Burros Act of 1971 (Public Law 92-195), and its amendments. The Act designated areas where the BLM manages the animals as a resource. The animals cannot be managed outside these designated areas, nor can new areas be created on public lands for the animals. The Herd Management Areas (HMAs) in the Plan Area are the last burro HMAs remaining in California. In addition, the California Fish and Game Code Sections 10930–10931 identify much of the southeastern portion of the state as a burro sanctuary.

HMAs are where BLM currently actively manages for wild horses and burros. Herd Areas are where the animals were found at the passage of the Wild Free-Roaming Horses and Burros Act of 1971. Through the land use planning process, the HMAs were decided to be actively managed for wild horses and burros.

II.3.2.3.13.1 Goals and Objectives

This alternative would not amend existing goals and objectives in the current land use plans. In addition to those goals and objectives, the DRECP would include the following goals and objectives:

Goals

- Ensure that wild horse and burro resources are given full consideration in land use planning and in management decisions.
- Preserve and protect remaining HMAs in the DRECP.
- Manage wild horse and burro populations in ways that ensure thriving natural ecological balance of the herds in their habitats.

Objectives

- Development cannot reduce or otherwise negatively impact burros' forage, water, shelter, space or impede their wild, free-roaming behavior in HMAs.
- Ensure renewable energy development projects have no negative impacts on BLM burros.

II.3.2.3.13.2 Conservation and Management Actions

Conservation and Management Areas for Development Focus Areas and DRECP Variance Lands, Future Assessment Areas, and Special Analysis Areas

- Incorporate all guidance provided by the Wild Free-Roaming Horses and Burros Act of 1971, its amendments, associated regulations, and any pertinent court rulings.
- Do not allow development that would reduce burros' access to forage, water, shelter, or space or impede their wild, free-roaming behavior in HMAs.
- Mitigation can only occur on lands that the animals were found at the passage of the Act. To expand the boundaries of an HMA back into the Herd Areas would require a land use plan amendment, the cost of which would be incurred by the application wishing to develop in the HMA.

II.3.2.3.14 Wilderness Characteristics

As part of the BLM's multiple-use and sustained-yield mandate, Section 201 of FLPMA requires the BLM to maintain on a continuing basis an inventory of all public lands and their resources and other values, which includes wilderness characteristics. Lands within the Planning Area that could be affected by renewable energy or other development authorized under the plan were inventoried for wilderness characteristics in 2012-13 under the direction of BLM Manual 6310. A total of 643,000 acres were found to have wilderness characteristics. Those lands having wilderness characteristics are carried through the alternatives to determine which of these lands will be managed to protect wilderness characteristics. Portions of existing transmission corridors were not inventoried for lands with wilderness characteristics as part of the draft DRECP process. If new development is proposed in a designated corridor, an inventory would be completed at that time. For areas where lands with wilderness characteristics occur, mitigation at a 1:1 ratio would be required (same as DFAs).

II.3.2.3.14.1 Goals and Objectives

Goal

- Ensure that adequate consideration and protection is given to lands with wilderness characteristics outside of designated Wilderness and Wilderness Study Areas and that these areas are managed to protect wilderness characteristics where appropriate in concert with other multiple-use and sustained-yield objectives

Objective

- Protect wilderness characteristics as an integral component of multiple-use and sustained-yield management of Planning Area BLM lands consistent with other goals and objectives.

II.3.2.3.14.2 Conservation and Management Actions

Conservation and Management Actions for the Entire Planning Area

- Complete an inventory of areas for proposed development that do not have an updated wilderness characteristics inventory.
- Employ avoidance measures as described under DFAs and approved transmission corridors.
- Compensation will be at a 2:1 ratio for impacts from any development that impacts wilderness characteristics.

Conservation and Management Actions for Those Lands Identified for Management to Protect Wilderness Characteristics

The areas identified in Figure II.3-6 will be managed to protect wilderness characteristics, and will be subject to the following CMAs.

- Include a no surface occupancy stipulation for any mineral with no exceptions, waivers, or modifications.
- Exclude these areas from ROW development.
- Close areas to construction of new roads and routes. Vehicles would continue to be permitted on existing routes, but the routes would not be improved beyond current standards.
- Close areas to mineral material sales.
- Prohibit commercial or personal-use permits for extraction of materials (e. g. no wood-cutting permits).
- Manage the area as VRM II.
- Require that new structures and facilities are related to the protection or enhancement of wilderness characteristics or necessary for the management of uses allowed under the land use plan.
- Make lands unavailable for disposal from federal ownership.
- Recommend withdrawal from mineral entry.

Conservation and Management Actions in Development Focus Areas and Approved Transmission Corridors

- Allow development in areas inventoried and identified as lands with wilderness characteristics.
- Require mitigation of lands with wilderness characteristics at a 1:1 mitigation. This would be accomplished through acquisition and donation to the federal government of: (a) wilderness inholdings; (b) wilderness edge holdings that have inventoried wilderness characteristics; or (c) other areas within the Planning Area that are managed to protect wilderness characteristics. Restoration of Wilderness and Wilderness Study Area impacts could be substituted for acquisition.

II.3.2.4 CDCA Plan Amendments

Portions of the CDCA are outside of the DRECP boundary. The following decisions apply to the full CDCA, but not the other RMPs amended by the DRECP.

II.3.2.4.1 Multiple-Use Classes

The following components are appropriate both within and outside of the Planning Area under all action alternatives to allow consistency in land management:

- Non-designated land that is a 'cherry stem' into wilderness will be classified under wilderness in a sub category as 'cherry stem - non designated wilderness'. In this sub category otherwise excluded activities in wilderness such as road grading, maintenance of existing facilities, etc., may be conducted subject to appropriate analysis and mitigation. The CMAs that state that minimum tool analysis is required for the wilderness land will be modified to state that minimum tool analysis will not be required for these 'cherry stem' lands.
- The remaining non-designated land will be divided into two different land use allocation groups:
    - Lands that are classified as Moderate or Intensive MUCs under No Action will be combined into one land use allocation called 'standard focus'. The CMAs for standard focus lands will be the same as the current CDCA plan MUC Moderate guidelines.
    - Lands in the Limited MUC under No Action will be placed in a 'conservation focus' land use allocation. The CMAs for conservation focus lands will be the same as the current CDCA plan MUC Limited guidelines.

Table II.3-50 presents an overview of how the CDCA's MUCs under the No Action Alternative translate to the DRECP's land allocations in management objectives/allowable

uses. It's important to note that while similarities can be drawn in management approaches between the two plans' differing allocations, the same cannot be said of their geographic distributions. For example, while MUC L lands may be managed similarly to DRECP conservation lands, MUC L lands do not automatically become conservation lands- they may end up in a variety of different DRECP allocations from DFAs to NLCS, depending on the resources present and the DRECP alternative considered. The table also provides a summary of how broad classes of land uses would be treated under the DRECP's preferred alternative in the different land allocations. This table does not, by itself, approve any specific activity, but only identifies the types of activities that could be approved. Prior to approval of any specific allowable activity identified in this table, the activity would also need to comply with current laws, regulations and policies, including, but not limited to, NEPA, ESA, ARPA, and be included in Native American consultations.

Table II.3-50
CDCA Plan and DRECP Preferred Alternative Crosswalk

DRECP Allocations (Equivalent/similar CDCA Multiple-Use Class)							
Land Use	*Wilderness (Class C)*	*ACEC, NLCS land that is not wilderness, SRMA or ERMA (Class L)*	*SRMA, ERMA (Class L, M, I)*	*Catellus (allocated, same as adjacent land-ACEC, NLCS, DFA, etc.)*	*Non-Designated Lands (Unclassified or Class M)*	*Variance (Unclassified or Class M)*	*DFA (Class I)*
Agriculture	Agricultural use, excluding livestock, is not allowed.						
Characterization – Studies and Research	Studies and research will be considered, as appropriate considering the management goals and objectives of the specific area, and compatible with existing and approved uses.						
Air Quality	All approved activities will meet air quality standards in all areas						
Water Quality/ Soil Management	All approved projects will not negatively impact water quality and soil standards should be met.						
Cultural and Paleontological Resources	Archaeological and paleontological values will be preserved and protected for all approved activities.						
Native American Values	Native American cultural and religious values will be preserved and protected. Native American groups will be consulted.						
Electrical Generation Facilities	Not allowed	New development is not allowed. Maintenance, retrofitting for newer technology, and operation of existing or previously approved facilities is allowed.		May be developed if approved by the State Director and not in conflict with deed restrictions.	Not allowed	May be allowed.	Allowed.
Transmission/ Distribution Facilities	Not allowed.	New development is not allowed. Maintenance, retrofitting for newer technology, and operation of		May be developed if approved by the State Director	New development may be allowed. Maintenance, retrofitting for newer technology, and operation of		New development is allowed. Maintenance,

Table II.3-50
CDCA Plan and DRECP Preferred Alternative Crosswalk

DRECP Allocations (Equivalent/similar CDCA Multiple-Use Class)							
Land Use	*Wilderness (Class C)*	*ACEC, NLCS land that is not wilderness, SRMA or ERMA (Class L)*	*SRMA, ERMA (Class L, M, I)*	*Catellus (allocated, same as adjacent land-ACEC, NLCS, DFA, etc.)*	*Non-Designated Lands (Unclassified or Class M)*	*Variance (Unclassified or Class M)*	*DFA (Class I)*
		existing or previously approved facilities is allowed.		and not in conflict with deed restrictions.	existing or previously approved facilities is allowed.		retrofitting for newer technology, and operation of existing or previously approved facilities is allowed.
Communication Sites	Not allowed	New development is not allowed. Maintenance, retrofitting for newer technology, and operation of existing or previously approved facilities is allowed.		May be developed if approved by the State Director and not in conflict with deed restrictions.	New development may be allowed. Maintenance, retrofitting for newer technology, and operation of existing or previously approved facilities is allowed.		New development is allowed. Maintenance, retrofitting for newer technology, and operation of existing or previously approved facilities is allowed.
Fire Management	Routine fire suppression activities administered on public land are conducted in accordance with the BLM CDD Fire Management Plan.						

Table II.3-50
CDCA Plan and DRECP Preferred Alternative Crosswalk

DRECP Allocations (Equivalent/similar CDCA Multiple-Use Class)							
Land Use	*Wilderness (Class C)*	*ACEC, NLCS land that is not wilderness, SRMA or ERMA (Class L)*	*SRMA, ERMA (Class L, M, I)*	*Catellus (allocated, same as adjacent land-ACEC, NLCS, DFA, etc.)*	*Non-Designated Lands (Unclassified or Class M)*	*Variance (Unclassified or Class M)*	*DFA (Class I)*
Vegetation							
Native plant harvesting, seed collection and restoration	Non-commercial removal may be allowed by permit. Commercial removal may be allowed by permit if there is a demonstrated benefit to the species and/or ecosystem. Mechanical methods are not allowed in Wilderness.		Commercial and noncommercial removal of vegetation may be allowed by permit.				
Threatened and Endangered Plant Species	Will be protected.						
Sensitive Plant Species	Impacts will be avoided; no net unmitigated loss.						
Unusual Plant Assemblages	Unusual Plant Assemblages are described in the general vegetation CMAs or relevant land allocation CMA (e.g., DFA, ACEC, etc.)						
Vegetation Manipulation (mechanical or chemical control, exclosures, prescribed burning)	Not allowed.	May be allowed. Aerial broadcasting application of chemical controls will not be allowed.					

Table II.3-50
CDCA Plan and DRECP Preferred Alternative Crosswalk

DRECP Allocations (Equivalent/similar CDCA Multiple-Use Class)							
Land Use	*Wilderness (Class C)*	*ACEC, NLCS land that is not wilderness, SRMA or ERMA (Class L)*	*SRMA, ERMA (Class L, M, I)*	*Catellus (allocated, same as adjacent land-ACEC, NLCS, DFA, etc.)*	*Non-Designated Lands (Unclassified or Class M)*	*Variance (Unclassified or Class M)*	*DFA (Class I)*
Habitat Enhancement	Manual treatments may be allowed.	May be allowed.					
Land Tenure Adjustment	BLM may acquire lands through exchange, purchase, or donation, but may but not dispose of land.	BLM may acquire lands through exchange, purchase, or donation. Lands may be available for disposal through exchange if the exchange results in a net benefit to the values of the unit.	BLM may acquire lands through exchange, purchase, or donation. Lands are available for disposal to parties that will manage the land in accordance with the recreational values of the SRMA.	May not dispose of lands	Land sales may be allowed. BLM land may be disposed through exchange.		

Table II.3-50
CDCA Plan and DRECP Preferred Alternative Crosswalk

DRECP Allocations (Equivalent/similar CDCA Multiple-Use Class)							
Land Use	*Wilderness (Class C)*	*ACEC, NLCS land that is not wilderness, SRMA or ERMA (Class L)*	*SRMA, ERMA (Class L, M, I)*	*Catellus (allocated, same as adjacent land-ACEC, NLCS, DFA, etc.)*	*Non-Designated Lands (Unclassified or Class M)*	*Variance (Unclassified or Class M)*	*DFA (Class I)*
Livestock grazing	May be allowed	Grazing will be allowed subject to protection of sensitive resources. Permanent and temporary support facilities may be allowed subject to protection of sensitive resources.					
Mineral Exploration and Development	Exploration may be allowed in a manner compatible with preservation. Development subject to valid existing rights.	**Leasable Minerals:** May be allowed. No surface occupancy is required outside of non-designated lands, Variance lands and DFAs. **Locatable Minerals:** Subject to deed restrictions, location of mining claims is non-discretionary. Plans of operation will include actions to reduce potential impacts on sensitive receptors. Mitigation, subject to technical and economic feasibility will be required. **Saleable Minerals:** Continuous use of existing areas of sand and gravel extractions is allowed subject to BLM permits. New operations may be allowed, subject to deed restrictions.					
Motorized Vehicle Access/Transportation							
Motorized use	Not allowed, unless needed for emergency access, valid existing rights or provide for in legislation.	May be allowed.					
Road maintenance	May be allowed.						
Road construction	Not allowed.	May be allowed.					

Table II.3-50
CDCA Plan and DRECP Preferred Alternative Crosswalk

DRECP Allocations (Equivalent/similar CDCA Multiple-Use Class)							
Land Use	*Wilderness (Class C)*	*ACEC, NLCS land that is not wilderness, SRMA or ERMA (Class L)*	*SRMA, ERMA (Class L, M, I)*	*Catellus (allocated, same as adjacent land-ACEC, NLCS, DFA, etc.)*	*Non-Designated Lands (Unclassified or Class M)*	*Variance (Unclassified or Class M)*	*DFA (Class I)*
Railroads	New railroads are not allowed.	May be allowed if there are no other viable alternatives.			May be allowed.		
Aircraft	Non-emergency aircraft landing is not allowed.	Non-emergency aircraft landing is not allowed.	May be allowed.				
Recreation							
Low user density, nonmechanical recreation	Allowed.						
High user density, and/or mechanical recreation	Mechanical recreation is not allowed. High user density may be allowed.	May be allowed.					
Motorized Use	Not allowed	May be allowed.					
Construction, operation, maintenance of BLM recreational facilities	Not allowed.	May be allowed.					

Table II.3-50
CDCA Plan and DRECP Preferred Alternative Crosswalk

DRECP Allocations (Equivalent/similar CDCA Multiple-Use Class)							
Land Use	*Wilderness (Class C)*	*ACEC, NLCS land that is not wilderness, SRMA or ERMA (Class L)*	*SRMA, ERMA (Class L, M, I)*	*Catellus (allocated, same as adjacent land-ACEC, NLCS, DFA, etc.)*	*Non-Designated Lands (Unclassified or Class M)*	*Variance (Unclassified or Class M)*	*DFA (Class I)*
Special recreation permits	May be allowed.						
Waste Disposal	Not allowed.	Not allowed.	Not allowed				
Wildlife Species and Habitat Management							
Threatened and Endangered Species	All species and their critical habitat will be protected.						
Special Status Species	Impacts will be avoided; no net unmitigated loss.						
Predator and Pest Control	Not allowed, except to alleviate public health hazards and to protect listed species.	May be allowed.					
Habitat Manipulation	May be allowed, subject to limitations described in "Vegetation" above.						
(Re)introduction of Native or Non-native Species	Introduction or reintroduction of native species is allowed except in wilderness areas where a determination must be made that it is consistent with wilderness values. Introduction of non-native species is allowed only to the extent that it benefits the desired habitat and species. Non-native species introductions are not permitted within wilderness areas.						
Wildlife drinkers/guzzlers	May be allowed.						
Wetland/Riparian Areas Management	Wetlands and riparian area impacts will be avoided or reduced to the extent possible.						
Wild Horses and	Identified populations of wild and free roaming horses and burros will be maintained in healthy, stable herds subject to						

Table II.3-50
CDCA Plan and DRECP Preferred Alternative Crosswalk

DRECP Allocations (Equivalent/similar CDCA Multiple-Use Class)							
Land Use	*Wilderness (Class C)*	*ACEC, NLCS land that is not wilderness, SRMA or ERMA (Class L)*	*SRMA, ERMA (Class L, M, I)*	*Catellus (allocated, same as adjacent land-ACEC, NLCS, DFA, etc.)*	*Non-Designated Lands (Unclassified or Class M)*	*Variance (Unclassified or Class M)*	*DFA (Class I)*
Burros	controls to protect sensitive resources.						
Wilderness Characteristics	Wilderness characteristics will be identified and considered in management decisions.						
Rights of Way and Use Authorizations (other than utility-scale energy development or transmission)							
Potable water wells	Not allowed.	May be allowed.					
Monitoring Wells/Stations	May be allowed.	May be allowed.					
Extraction wells	Not allowed.	May be allowed subject to deed restrictions.					
Highway safety vertical or horizontal road alignments	May be allowed.	May be allowed.					
Access roads to private property	Not allowed.	May be allowed.					
Other use authorization	Not allowed.	May be allowed.					

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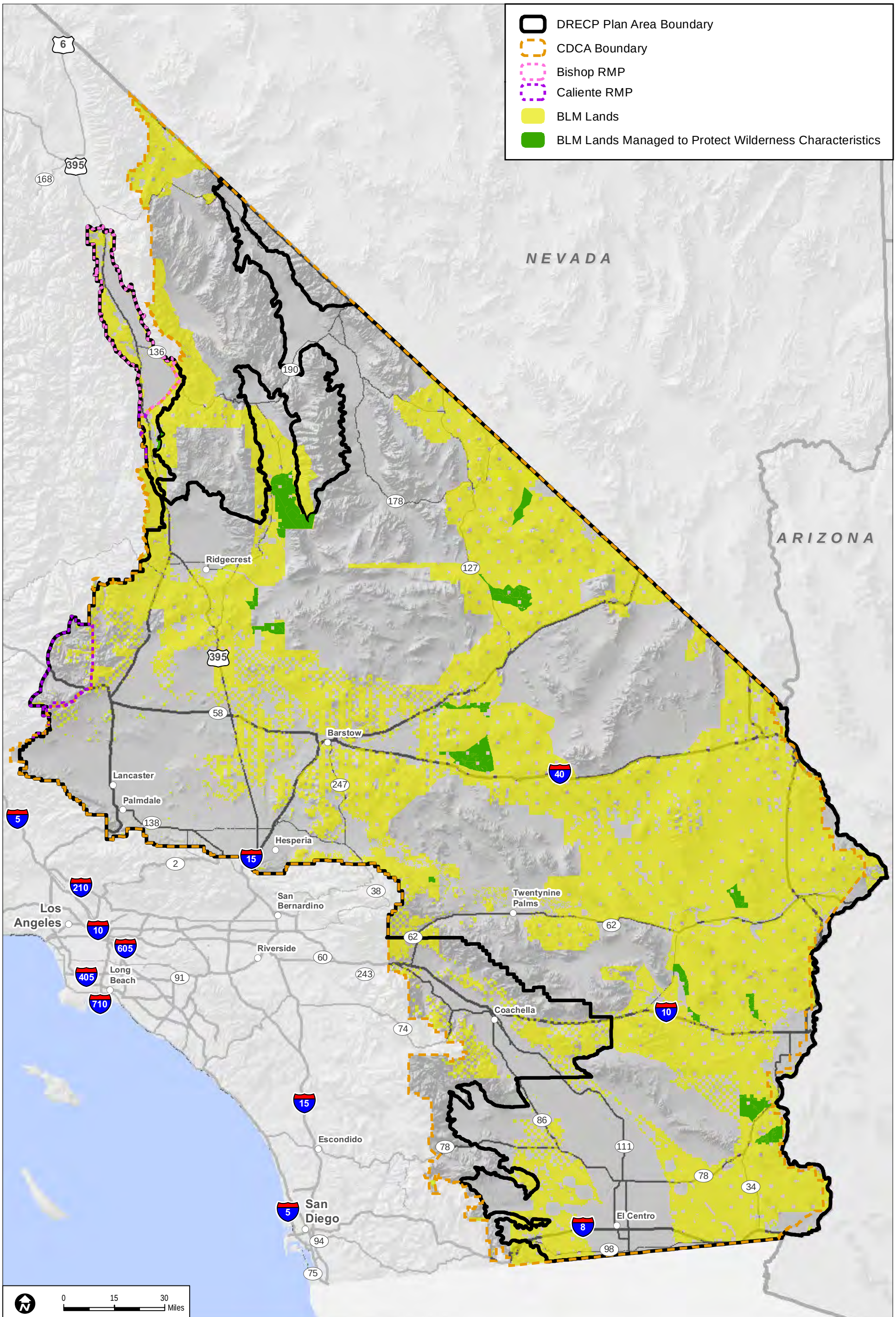

Sources: ESRI (2014); CEC (2013); BLM (2013); CDFW (2013); USFWS (2013)

FIGURE II.3-6

Preferred Alternative – BLM Lands Managed to Protect Wilderness Characteristics

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II.3.2.4.2 Visual Resource Management Classes and National Conservation Lands outside of the DRECP

VRM Classes and National Conservation Land designations in the CDCA outside of the Planning Area are included in the discussions in Section II.3.2.2.1 and Section II.3.2.3.12.

II.3.3 NCCP Elements of the Preferred Alternative

The following provides an overview of the NCCP elements of the Preferred Alternative. Appendix N provides a more detailed description of the NCCP elements that apply to all alternatives described in Volume II. At the broadest level, the NCCP includes elements related to Covered Activities and conservation elements.

Each of the NCCP alternatives includes the full range of Covered Activities anticipated under the DRECP for each of the interagency Plan-wide alternatives. The Plan-wide description of Covered Activities serves as the description of Covered Activities for the NCCP alternatives.

The NCCPA requires that NCCPs provide for the conservation and management of Covered Species and natural communities on a landscape or ecosystem level through the creation and long-term management of habitat reserves and the application of other equivalent conservation measures. To reflect the conservation that would occur under the NCCP, the NCCP elements of each alternative define the following means of providing conservation within Reserve Design Lands:

- An **NCCP Conceptual Plan-Wide Reserve Design** defines the areas that are considered to be the highest priority for biological conservation. These priority conservation areas include species population centers and landscape linkages that provide both connectivity between large habitat blocks and areas for potential movement in response to climate change. These priority conservation areas include both BLM lands and other lands, including private land and nonfederal public land. These priority conservation areas are consistent with those identified in the interagency Plan-wide alternatives.
- A **DRECP NCCP Reserve Design**, nested within the NCCP Conceptual Plan-Wide Reserve Design. BLM lands and non-BLM Lands included in the DRECP NCCP Reserve Design would receive long-term protection and would be conserved and managed to preserve and enhance Natural Communities and habitat for Covered Species.

  The DRECP NCCP Reserve Design identifies those lands within BLM LUPA conservation designations that would be protected, maintained, and managed

to preserve their conservation value for Covered Species for at least the duration of the NCCP. Identified BLM Conservation Lands cover areas of key biological importance in the DRECP NCCP Reserve Design and in the NCCP Conceptual Plan-Wide Reserve Design. A Management Agreement and/or Durability Instrument placed on these key areas provides long-term conservation assurance. Durability Instruments can be applied as advanced mitigation or to areas of non-acquisition compensation for a specific project.

Within non-BLM lands, areas identified within the DRECP NCCP Reserve Design would be given a high priority for conservation through the purchase of private lands or conservation easements from willing sellers. Once acquired, these lands would be added to the NCCP Reserve, and would be managed for the long-term for the values for which they were acquired.

- **Biological conservation actions** are DRECP actions that contribute to the conservation and management of Covered Species and their habitats. DRECP biological conservation actions include BLM LUPA management actions, DRECP CMAs (additional species–specific management actions on BLM lands, and avoidance, minimization and compensatory mitigation actions for Covered Activities), creation and management of the NCCP Reserve, and implementation of the DRECP MAMP.
- **Other conservation actions**, would occur outside of the DRECP NCCP Reserve Design and NCCP Conceptual Plan-Wide Reserve Design and include the maintenance and management of all of the BLM LUPA conservation designation lands in accordance with the BLM LUPA management actions specified for each conservation designation. The BLM LUPA also establishes the allowable uses that may be authorized within each conservation designation, and describes the DRECP Plan-wide CMAs that are applied to avoid, minimize and compensate for any effects that result from authorizing the established allowable uses.

  Biological conservation actions on BLM Conservation Lands outside of the NCCP Conceptual Plan-Wide Reserve Design are essential for DRECP conservation. Conservation actions on these lands include BLM LUPA Management Actions that will maintain the significant ecological and scientific values that conserve Covered Species, natural communities, habitat connectivity between existing LLPAs and large intact landscape blocks, ecosystem processes, and potential climate refugia.

  DRECP will deliver the complete set of BLM Conservation Lands within the DRECP Plan-Wide Reserve Design Envelope at the time the LUPA ROD is approved.

Taken together, the Biological conservation actions on BLM lands and the establishment of the DRECP NCCP reserve during implementation of the plan, will contribute to the recovery

of DRECP Covered Species and natural communities, landscape connectivity, ecosystem processes, and other landscape features that promote resiliency in contemplation of climate change. Reserve design features and other conservation actions within the NCCP alternatives are consistent with and nested within the Plan-Wide Reserve Design Envelope in the interagency Plan-wide alternatives, but differ in terms of how reserve design features are grouped within the NCCP Conceptual Plan-Wide Reserve Design and the DRECP NCCP Reserve Design. Table II.3-51 summarizes the NCCP elements of the Preferred Alternative. As shown in Table II.3-51, the DRECP NCCP Reserve Design covers approximately 425,000 acres of BLM and non-BLM lands. Figure II.3-7 depicts the NCCP for the Preferred Alternative.

Table II.3-51
NCCP for the Preferred Alternative

NCCP Components	Acreage
DFAs	**2,024,000**
Study Area Lands	**183,000**
Future Assessment Areas	128,000
Special Analysis Areas	42,000
DRECP Variance Lands	13,000
DRECP Plan-Wide Reserve Design Envelope	**14,921,000**
Existing conservation areas	7,662,000
NCCP Conceptual Plan-Wide Reserve Design	1,847,000
Inside the DRECP NCCP Reserve Design	425,000
BLM LUPA conservation designations	314,000
Biological Conservation Priority Areas on non-BLM lands	111,000
Outside the DRECP NCCP Reserve Design	1,422,000
BLM LUPA conservation designations	868,000
Biological Conservation Priority Areas on non-BLM lands	554,000
BLM LUPA conservation designations outside the NCCP Conceptual Plan-Wide Reserve Design	3,726,000
Biological Conservation Planning Areas on non-BLM lands	1,685,000
Urban Areas, Other Lands, and Undesignated Areas	**5,457,000**
Plan Area Total	**22,585,000**

Notes: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table

The DRECP Monitoring and Adaptive Management Program (MAMP) is an integral and important component for implementing the DRECP NCCP. The DRECP MAMP

monitoring framework will facilitate the development of a comprehensive monitoring program and schedule that will collect information to accomplish the following biological monitoring activities:

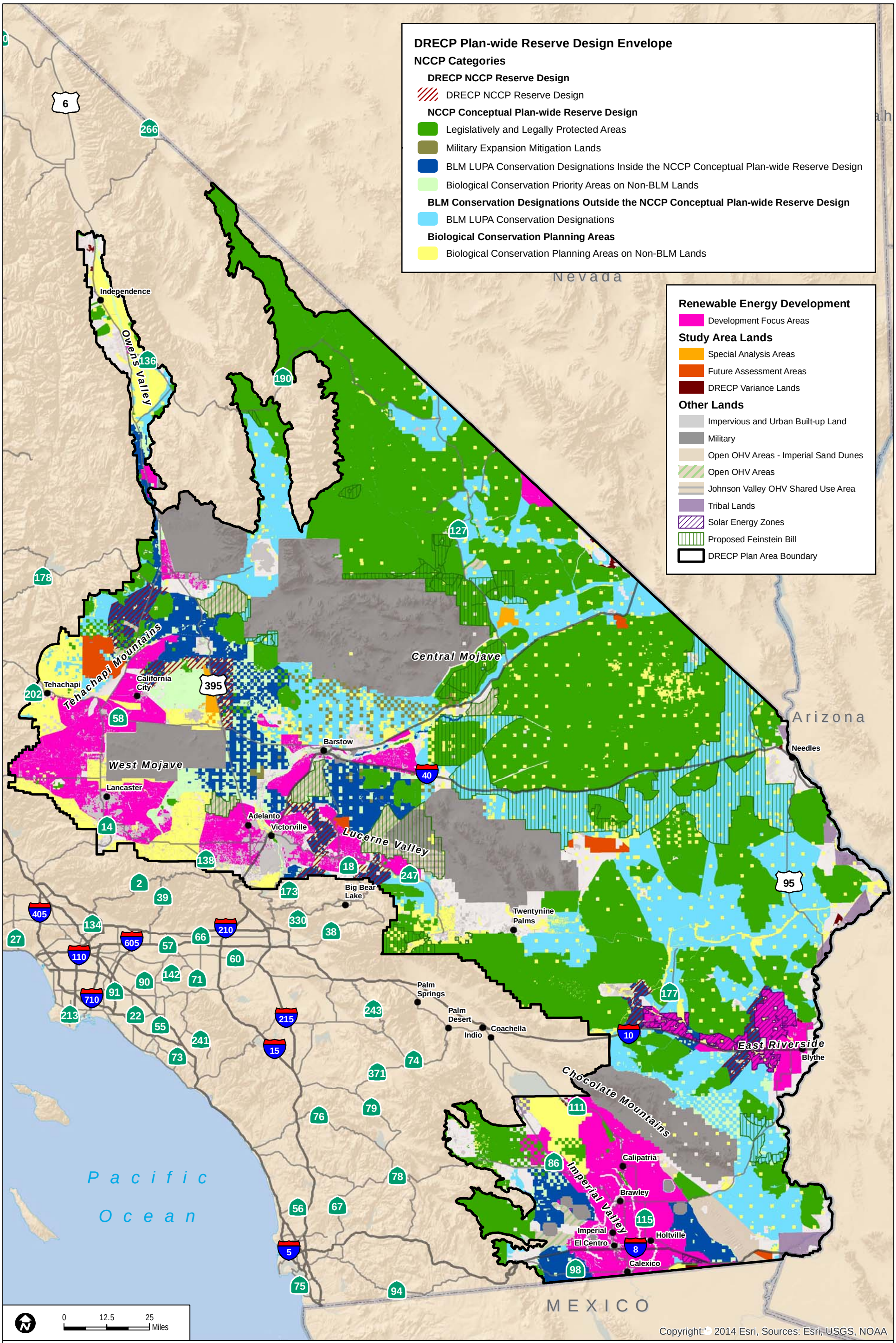
1. Monitor the status of biological resources addressed by the plan, including Covered Species and natural communities,
2. Account for and assess authorized take,
3. Report on the establishment of habitat reserves or other measures that provide equivalent conservation of Covered Species,
4. Evaluate the adequacy of the DRECP conservation strategies, mitigation measures, and land management activities,
5. Evaluate the effectiveness of the plan in meeting the conservation objectives of the plan,
6. To provide information to direct the adaptive management program, and
7. Map and track land use changes in the plan area that may affect habitat values or Covered Species, and allow evaluation of the effects of climate change within the DRECP Conservation Area.

Monitoring will be implemented where biologically appropriate and necessary within the DRECP Conservation Area and will leverage existing and ongoing biological monitoring programs. The MAMP will focus on monitoring lands added to the NCCP Reserve and habitat management and compensation actions throughout the DRECP Conservation Area.

In addition, compliance monitoring will assist with tracking compliance with the plan and the implementation agreement by the wildlife agencies and implementing entities and to ensure that mitigation and conservation measures are being implemented roughly proportional in time and extent to the impact on habitat or Covered Species authorized under the plan.

Certain definitions in the Glossary of Terms are particularly relevant to the NCCP elements of DRECP and are repeated here for clarification:

Biological Conservation Actions. DRECP actions that contribute to the conservation and management of Covered Species and their habitats. DRECP biological conservation actions include BLM LUPA management actions, DRECP CMAs (additional species–specific management actions on BLM lands, and avoidance, minimization and compensatory mitigation actions for Covered Activities), creation and management of the NCCP Reserve, and implementation of the DRECP MAMP.



Sources: ESRI (2014); CEC (2013); BLM (2013); CDFW (2013); USFWS (2013)

FIGURE II.3-7

Preferred Alternative - Natural Community Conservation Plan

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BLM LUPA Conservation Designations (also known as BLM Conservation Lands or BLM Conservation Allocations). Administrative designations that would include National Conservation Lands, ACEC, and Wildlife Allocation designations on BLM-administered land. BLM Wilderness Areas, Wilderness Study Areas, National Historic Trails, and Wild and Scenic River designations (existing and proposed) are included as part of the existing Legislatively and Legally Protected Areas (LLPAs). The BLM LUPA conservation designations were identified through the planning process and considered the biological and nonbiological resource values across the Plan Area.

For the NCCP, subsets of the BLM LUPA conservation designations are depicted in Figure II.3-7 and summarized in Table II.3-51. As shown, BLM LUPA conservation designations occur within and outside the NCCP Conceptual Plan-Wide Reserve Design and within and outside the DRECP NCCP Reserve Design. The BLM LUPA conservation designation lands occur within their entirety within the DRECP Plan-Wide Reserve Design Envelope.

DRECP NCCP. The NCCP has been prepared to provide for the conservation and management of Covered Species and to address the impacts of Covered Activities. The DRECP NCCP BGOs, the DRECP NCCP Reserve Design, BLM Conservation Lands, DFAs and CMAs are the essential elements of the DRECP NCCP. The DRECP NCCP is informed by, and is designed to implement a substantial portion of, the DRECP Plan-Wide Conservation Strategy and a substantial portion of the NCCP Conceptual Plan-Wide Reserve Design. The DRECP NCCP provides the basis for the issuance of take authorizations for Covered Activities under Section 2835 of the NCCPA.

DRECP NCCP BGOs. Refer to Step-Down Biological Objectives in the Glossary of Terms.

Interagency Plan-Wide Conservation Priority Areas. Mapped areas of key biological importance within the DRECP Plan-Wide Reserve Design Envelope for each alternative within which protection and management of some lands for Covered Species is necessary to contribute to DRECP Plan-Wide BGOs, achieve Step-Down Biological Objectives, and mitigate the effects of incidental take of Covered Species. Compensatory mitigation actions will be focused primarily within the Interagency Plan-wide Conservation Priority Areas.

For the NCCP, subsets of the Interagency Plan-Wide Conservation Priority Areas are depicted in Figure II.3-7.

NCCP Reserve. LLPAs and lands within the DRECP NCCP Reserve Design that are added to the NCCP Reserve. A portion of the BLM Conservation Lands within the DRECP NCCP Reserve Design will be added to the DRECP NCCP Reserve by applying tools that provide durable, long-term assurances that the lands will be protected and managed for Covered Species. A portion of the private lands and non-federal public lands within the DRECP NCCP Reserve Design will be added to the NCCP Reserve by purchasing them

from willing sellers. All LLPAs by definition have durable, long-term protections and are included in the NCCP Reserve.

II.3.4 GCP Elements of the Preferred Alternative

The USFWS has developed a General Conservation Plan (GCP) that provides the framework for a streamlined permitting process for renewable energy development by nonfederal applicants in the Plan Area. The proposed GCP is an "umbrella" type of programmatic HCP, and the USFWS will consider issuing permits to applicants who submit project proposals that demonstrate consistency with the terms and conditions of the GCP. Any permits issued under the GCP "umbrella" would authorize incidental take of Covered Species in conjunction with DRECP Covered Activities on nonfederal lands within the DFAs and DRECP reserve design. Within the reserve design, the Conservation Planning Areas are nonfederal lands from which permittee mitigation lands would be acquired from willing sellers by fee title or conservation easement. In addition, permittees may be allowed in limited circumstances to fund non-acquisition mitigation measures on BLM LUPA conservation designations and on nonfederal Existing Conservation Lands. The proposed GCP is set forth in Appendix M and summarized below. Appendix M documents how the proposed GCP would meet incidental take issuance criteria, and how applicants would demonstrate consistency with the GCP to obtain severable incidental take permits.

II.3.4.1 Overview of the Nonfederal GCP Lands of the Preferred Alternative

The proposed GCP component of the Preferred Alternative includes all nonfederal lands within the DRECP Development Focus Areas and Conservation Planning Areas, as well as nonfederal inholdings within Existing Conservation Lands and BLM-administered lands in the Plan Area; these lands comprise the GCP Permit Area. Nonfederal lands include privately owned lands and lands owned by state and local jurisdictions. Within the GCP Permit Area, Covered Species would be incidentally taken in conjunction with Covered Activities. The larger GCP Plan Area encompasses the GCP Permit Area as well as Priority Conservation Areas outside the GCP Permit Area where permittee non-acquisition mitigation measures may be implemented (i.e., BLM-administered lands corresponding to the DRECP NCCP Reserve Design). The USFWS proposed GCP, and CEC and CSLC application materials for incidental take permits under the GCP, are included in Appendix M. The proposed CEC Permit Area consists of nonfederal lands where CEC would have project licensing authority, which in some cases may include CSLC lands, but it does not have a specific spatial boundary. The proposed CSLC Permit Area consists of CSLC school lands and sovereign lands. The conservation strategy and Covered Activities under the GCP would be consistent with the DRECP. Table II.3-52 provides a summary of the Preferred Alternative within the GCP component of the DRECP; Figure II.3-8 depicts the Preferred Alternative within the GCP area. As shown in Table II.3-52, the GCP portion of the Plan Area

covers a total of 1,632,000 acres of DFAs on nonfederal lands (81% of the total DFAs in the Preferred Alternative). The biological resources environmental setting/affected environment for the GCP portion of the Plan Area is described in Section III.7.11. The impact analysis for the Preferred Alternative on nonfederal lands within the GCP area is provided in Section IV.7.3.2.4.

Table II.3-52
Preferred Alternative within the GCP

Alternative Components	Acreage[1]
DFAs (Nonfederal Lands Only)	**1,632,000**
Study Area Lands (Nonfederal Lands Only)	**77,000**
Future Assessment Areas	70,000
Special Analysis Areas	7,000
DRECP Plan-Wide Reserve Design Envelope (Nonfederal Lands Only)	**2,714,000**
Existing conservation areas	434,000
BLM LUPA conservation designations	1,200,000
Conservation Planning Areas	1,080,000

Notes: Urban areas, Other Lands, and Undesignated Areas also occur on nonfederal lands but are not reported here. The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table

II.3.4.2 Overview of the GCP Permitting Process

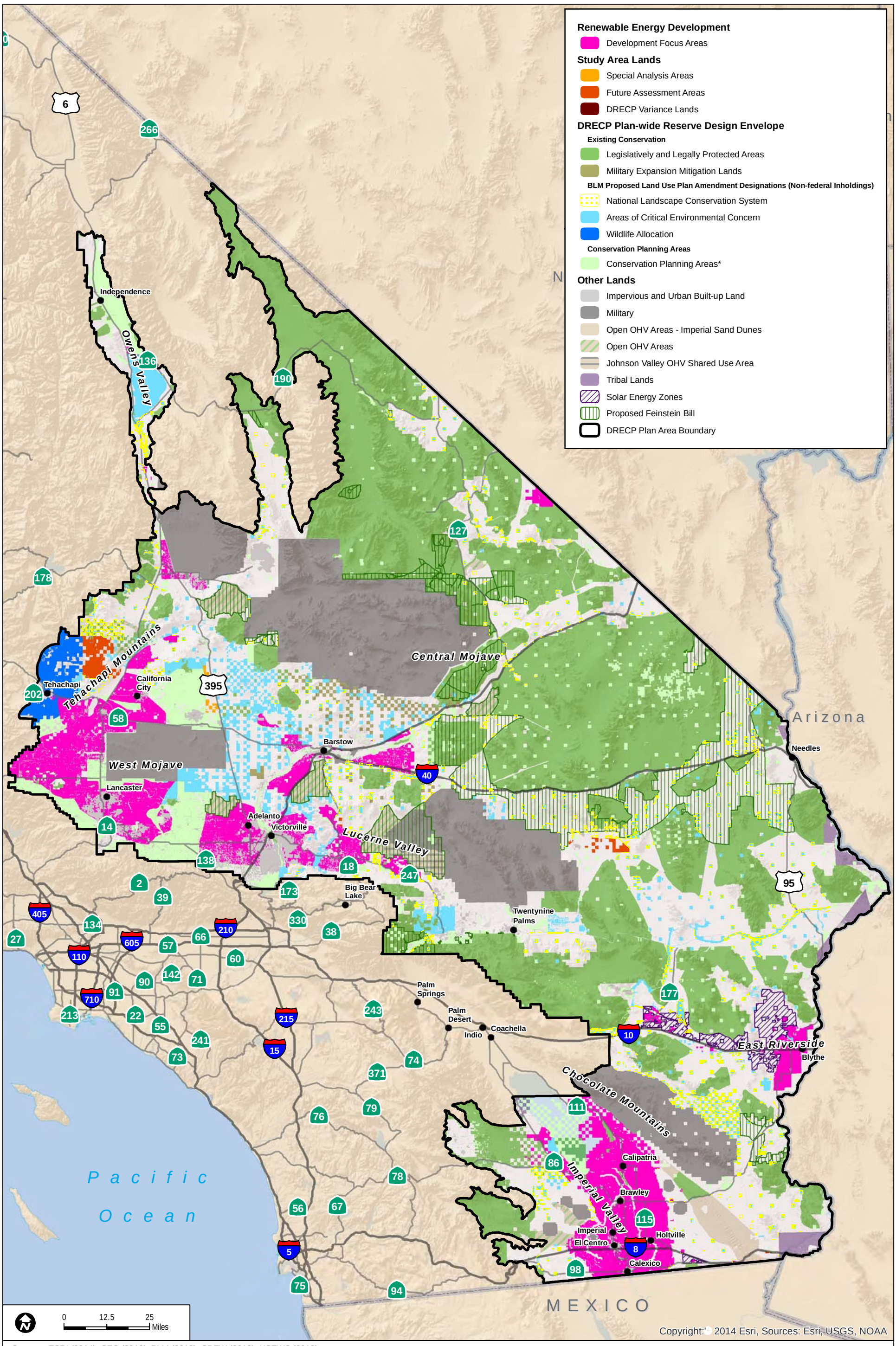
The USFWS's proposed action under NEPA in the DRECP Draft EIR/EIS is to decide whether to approve the GCP, and to issue severable incidental take permits to CEC, CSLC, and other future applicants under the GCP. The Draft EIR/EIS thus incorporates a combined GCP/EIS in one document. The Draft EIR/EIS analyzes the impacts of the Plan-wide DRECP Preferred Alternative, of which the USFWS's proposed GCP is an integral component, as well as four other action alternatives that each contain a GCP component, and a No Action Alternative. The description of the GCP as proposed in the Preferred Alternative is carried throughout each of the other alternatives, which differ as to the number and configuration of nonfederal acres that would be impacted under each alternative.

Two applicants, the CEC and CSLC, have requested incidental take permits as part of the DRECP. CEC and CSLC have renewable energy project licensing or landowner jurisdiction, respectively, over portions of the nonfederal lands within the Plan Area. The CEC and CSLC application materials are included for public review in Appendix M. USFWS will consider issuing permits to CEC and CSLC, and to future renewable energy applicants, after the DRECP and its GCP component are approved and a ROD for a Final EIR/EIS is signed.

The GCP is based on the DRECP's comprehensive conservation strategy for 37 proposed Covered Species, including BGOs, CMAs, and a Plan-wide reserve design. The DRECP Executive Policy Group and DRECP Coordination Group, both of which will include the USFWS as members, would oversee implementation of the GCP as part of the overall DRECP. Among other responsibilities, the DRECP Coordination Group would manage compensation land acquisition and management, and the DRECP MAMP, supported in part by mitigation fees paid by GCP permittees for compensation.

The USFWS's intent is to avoid redundancy in this Draft EIR/EIS as much as possible. Thus, the GCP appendix refers to appropriate sections of the Draft EIR/EIS for descriptions of Covered Activities, BGOs, CMAs, baseline conditions, effects analyses, and other information relevant to Covered Species. The GCP estimates the maximum level of incidental take of each Covered Species that would result from DRECP Covered Activities on nonfederal lands within the DFAs, and the amount of CMAs that would be required to minimize and mitigate the effects of that take to the maximum extent practicable. Together, the GCP in Appendix M and the Draft EIR/EIS contain all the mandatory elements of a HCP/GCP, as well as adequate information to demonstrate compliance of the proposed GCP with ESA Section 10(a)(2)(B) issuance criteria.

The CEC and CSLC applications include supplementary materials for public review in Appendix M that provide each agency's program-specific project description and incidental take analysis. The applications incorporate the GCP component of the DRECP by reference and summarize relevant sections of particular importance that need to be highlighted for their respective permit requests. Future applicants under the GCP would also use this approach. The supplementary materials for each application will require attachments with additional information on the level of impacts (i.e., incidental take) to Covered Species expected by the proposed project(s), the amount of mitigation lands that would be acquired, and how the proposed permit would fulfill all issuance criteria (see Section 7.1, Application Process, of Appendix M for a full list of required attachments). The USFWS would begin to consider permit applications under the GCP after a ROD for the Final EIR/EIS is signed, and would continue to consider permit applications until an application exceeds the maximum take levels analyzed for the GCP.



Sources: ESRI (2014); CEC (2013); BLM (2013); CDFW (2013); USFWS (2013)

*The portion of the reserve design outside Existing Conservation Areas and BLM LUPA Conservation Designations on private and non-BLM public lands from which reserve areas will be assembled from willing sellers as compensation for Covered Activities.

FIGURE II.3-8

Preferred Alternative - General Conservation Plan

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Applicants may be state agencies, local governments (such as cities or counties), or individual landowners or project proponents. Seven local jurisdictions in the Plan Area are members of the DRECP Stakeholder Committee (the Counties of Imperial, Inyo, Kern, Los Angeles, Riverside, and San Bernardino, and the City of Lancaster), and may consider applying for incidental take permits in the future, after the DRECP is approved. State agencies and local governments, if issued a permit under the GCP, would be able to extend their incidental take authorization to qualified third-party renewable energy applicants over which the agency or local government has jurisdiction. Applicants must submit to the USFWS a complete application package containing a federal Fish and Wildlife Permit Application Form 3-200-56, GCP Supplementary Application Form, $100.00 application fee (waived for government agencies), a proposed HCP and incidental take analysis, and an analysis of the proposed permit issuance under NEPA. For the HCP and NEPA requirements, the application need only refer to appropriate sections of the DRECP Final EIR/EIS (if it is approved) and GCP. As required by ESA Section 10(c), the USFWS will publish a Notice of Availability in the Federal Register announcing a 30-day public comment period for each application received under the GCP.

To issue a permit under the GCP, the USFWS would need to determine whether the application is consistent with the GCP, and with the impact (incidental take) analysis contained in the DRECP Final EIR/EIS and the USFWS's internal ESA Section 7 consultation on the GCP. In addition to those documents, the administrative record for each permit decision would include a USFWS "Findings and Recommendations" statement (Findings) that summarizes how the application meets ESA incidental take issuance criteria and/or Eagle Act take issuance criteria, as appropriate, and a separate Findings that summarizes how the application meets NEPA requirements.

As a requirement of the GCP, proponents of Covered Activities on nonfederal lands under the GCP that will likely impact bird and bat Non-Covered Species during construction, operations, and maintenance will develop and implement a project-specific bird and bat conservation strategy (BBCS) for non-covered bird and bat species (see Appendix M). The BBCS will be created on a project-by-project basis by incorporating a variety of available measures that are applicable to the specific project and that together meet the approval of the DRECP Coordination Group for sufficiently avoiding and minimizing, and adaptively monitoring and managing impacts to bird and bat Non-Covered Species.

If the GCP is approved and a ROD for the DRECP Final EIR/EIS is signed, the Imperial Irrigation District (IID) may consider applying for a permit under the GCP for incidental take of Covered Species associated with their proposed Salton Sea Incremental Habitat Plan (Incremental Plan). Because the Incremental Plan is still in development, IID will decide at a later time whether to apply for a permit. Please refer to Appendix M for a brief overview of the IID Incremental Plan.

All portions of the Salton Sea's exposed playa have a potential for solar and geothermal renewable energy development, including a proven resource in the Known Geothermal Resource Area in the south/southeast portion of the sea. Successful implementation of a renewable energy funding component for the long-range Salton Sea Restoration Plan and the Incremental Plan would require the development of an adequate electrical transmission system to carry the energy outside of the Salton Sea basin. As mitigation for renewable energy Covered Activities, the Incremental Plan would include development of a wildlife habitat mosaic in conjunction with renewable energy development (primarily geothermal) in selected areas of the exposed playa. The types of habitat constructed to mitigate for the impacts of renewable energy development would vary based on identified need for specific habitat types and site logistics, and could vary from shallow water to deeper water, and from permanently inundated to pulse or seasonally flooded; areas of mesic habitat may also be possible.