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June 30, 2011

**PRELIMINARY DRAFT MEMORANDUM**

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**To:** DRECP REAT Agencies  
**From:** Dudek/ICF  
**Subject:** Approach to Structuring the Preliminary Conservation Strategy  
**Date:** June 30, 2011

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**PURPOSE**

This memorandum summarizes proposed methods for structuring the Preliminary Conservation Strategy. The structure will be developed based on a combination of the methods outlined below. The Preliminary Conservation Strategy will focus on optimization of development flexibility and achievement of conservation goals. The optimization process is an iterative one and the Preliminary Conservation Strategy will provide a structure and starting point for that iterative process. Note that the preliminary conservation strategy approach and structure will inform the approach to the effects analysis; therefore, the Proposed Approach to the DRECP Effects Analysis Memorandum has been developed in parallel with this memorandum.

**ASSUMPTIONS**

Several assumptions will guide development of the Preliminary Conservation Strategy structure, including:

- The DRECP will incorporate several features including: 1) establishment of new conservation protection on existing unprotected land, 2) application of conservation actions (management, monitoring, research) on existing and newly protected or partially protected lands, 3) application of avoidance and minimization measures for Covered Activities to minimize the effects on Covered Species and natural communities, and 4) optimization of development flexibility for Covered Activities.
- The conservation strategy structure for both development and conservation areas will employ both map-based and criteria-based elements. Map-based elements (i.e., “hardline” areas) include designated Exclusion Areas where Covered Activities related only to

# DRAFT

June 30, 2011

*Memorandum*

*Subject: Approach to Structuring the Preliminary Conservation Strategy*

---

transmission lines and conservation actions would be allowed. There may also be designated Exclusion Areas where no Covered Activities, including transmission lines, would be permitted. The criteria-based elements (i.e., “softline” areas) would apply to the remainder of the Plan Area. Conceptually, Covered Activities could occur anywhere within the softline areas, but subject to the criteria established by the DRECP.

- The conservation strategy structure will employ species-specific and landscape-, habitat- and ecological processes-based conservation and compensation measures, as appropriate depending on the impacted resources.
- The conservation actions implemented under the conservation strategy structure will be proportional to the effects (impacts) of the implemented Covered Activities on the resource. The actions will also be in-kind and in-place as much as possible relative to those impacts.
- Subareas within the Plan Area will be identified to help focus conservation goals and objectives for Covered Species and natural communities associated with the geographic boundaries of one or more subareas within the Plan Area (see separate Subareas Memorandum for discussion of optional approaches for definition of subareas). Subareas are also helpful for summarizing and reporting data, and for organizational purposes within the DRECP documents. (Note: subareas will not be used to delineate boundaries for regulatory coverage of Covered Activities or Covered Species.)
- The conservation strategy approach and structure described here does not yet consider adaptive management, monitoring, funding, or implementation structure because these elements have not yet been developed. These elements will be components of the overall conservation strategy when adopted.

## **APPROACH AND METHODS**

The preliminary conservation strategy structure will be developed based on a bottom-up, data-driven approach that utilizes the available spatial data (i.e., resource and land use maps, etc.) and non-spatial qualitative information (e.g., life history traits, ecological relationships, etc.). The key components of the approach are described below followed by a description of how the conservation strategy will be structured.

# DRAFT

June 30, 2011

*Memorandum*

*Subject: Approach to Structuring the Preliminary Conservation Strategy*

---

## **Key Components**

The bottom-up, data-driven approach will focus on synthesizing key information and conservation analyses to derive a preliminary conservation strategy structure for the DRECP Plan Area. Key components include:

- Baseline Data
- Species Habitat Models
- Gap Analysis
- Existing Conservation Actions
- Biological Goals and Objectives
- Reserve Design.

The available information and the considerations and approach to integrating this information into the preliminary conservation strategy structure are described below.

### ***Baseline Data***

The Framework Conservation Strategy Report (FCSR) documents the baseline data related to biological resources, physical and ecological processes, and land uses in the DRECP Plan Area. This forms the foundation for conservation strategy development. The baseline conditions information will be integrated into the preliminary conservation strategy in the following ways:

- *Natural Communities.* The initial land cover map and associated acreage summary by vegetation types and land covers (Figure II-5 and Table II-3 of the FCSR) show the geospatial distribution of these elements and the amount and relative proportion of each in the Plan Area. For example, the scrub and chaparral community comprises over 50% of the Plan Area and occurs throughout the Plan Area. In contrast, the riparian community and wetland community combined comprise only 1.5% of the Plan Area and generally occur in discrete locations in the Plan Area. This kind of information may be incorporated into the conservation strategy to set Plan Area conservation goals. Progress toward achievement of goals may be measured and reported on a Plan area or subarea basis. Conservation may consider factors such as acreage or areal extent of natural communities as well as communities that fulfill an important function such as migratory stopover habitat or support an endemic species, which should be revealed in the species

# DRAFT

June 30, 2011

## Memorandum

*Subject: Approach to Structuring the Preliminary Conservation Strategy*

---

profile and habitat modeling. Baseline natural communities data are also integrated into the species models, gap analysis, and reserve design components described below.

- *Species Diversity and Occurrence.* Species diversity information, as described in FCSR Section II.C.3 and II.C.4, provides insight on how the Plan Area natural communities function to provide habitat for the spectrum of animal and plant species. Species occurrence information for Covered Species is described and mapped in each species profile provided in Appendix A of the FCSR. The Covered Species list has been expanded since the FCSR and additional accounts and reporting of species occurrence data will be provided with the preliminary conservation strategy. This information will be integrated into the conservation strategy to set Plan Area and/or subarea-specific conservation priorities. Additionally, species occurrence data will be used to compare to and refine the species habitat models.
- *Physical and Ecological Processes.* Physical and ecological processes information, as described in FCSR Section II.B and II.C, provides information on the key processes maintaining the ecological function of the Plan Area. This information was used to establish the landscape-level biological goals and objectives and will be integrated into the conservation strategy to set Plan Area and/or subarea-specific conservation priorities.
- *Land Uses.* Land uses and ownership, as described in FCSR Section II.D, are varied across the Plan Area and include, among other land uses, developed cities, agricultural areas, military lands, and wilderness areas and national parks. Knowledge of the distribution of the uses and ownerships is useful in developing the gap analysis and reserve design, as described below.

With the exception of expanding the species profiles to address the 50 species currently on the Covered Species list, the baseline data component is considered complete for purposes of developing the Preliminary Conservation Strategy.

### **Species Habitat Models**

The DRECP will employ species habitat models to identify the geospatial distribution of suitable habitat in the Plan Area based on defined species-specific physical and biological habitat parameters for the Covered Species. The results of the species habitat models will be used to help focus the conservation strategy geographically. For example, species habitat modeling for riparian bird species is expected to result in overlapping modeled suitable habitat in areas with the most productive riparian zones. These riparian bird species may be grouped into a guild

# DRAFT

June 30, 2011

*Memorandum*

*Subject: Approach to Structuring the Preliminary Conservation Strategy*

---

representing a set of species with similar conservation needs. Species habitat modeling may also show that certain species are very narrowly distributed in the Plan Area (e.g., the narrow endemic species of the Amargosa River Valley or carbonate endemic plant species of the San Bernardino Mountains). The conservation strategy for these species will necessarily be focused specifically in these areas of the Plan Area. Species habitat models will be used in the gap analysis and reserve design components described below (see separate memorandum regarding Species Modeling Approach).

## **Gap Analysis**

As described in the preliminary gap analysis provided in FCSR Section III.B, a gap analysis evaluates the distribution of high value biological resources relative to the distribution of existing protected lands to identify any “gaps” in protection. Protection gaps represent a geospatial priority of the conservation strategy. As part of the preliminary conservation strategy, the gap analysis evaluation will be expanded to assess the gaps in protection relative to species habitat model results for the 50 species on the Covered Species list. For species with modeled suitable habitat largely or entirely within areas considered protected (Type 1 or Type 2 lands), the conservation strategy may focus on management and conservation actions within the protected suitable habitat rather than land acquisition/protection. In contrast, for Covered Species primarily restricted to narrow distributions on private lands with little or no existing protection (Type 4 lands), the conservation strategy would employ strict encroachment limits and/or legal protection or acquisition requirements.

## **Existing Conservation Actions**

The Conservation Actions Summary Matrix (FCSR Section III.C) compiles the conservation actions proposed, planned for, and/or implemented for species and natural communities under existing plans and programs in the Plan Area. This summary matrix will be amended to address the additional species on the proposed Covered Species list. This summary matrix will contribute to formulating the suite of conservation measures to be considered for the preliminary conservation strategy. The summary of existing conservation actions will also help identify conservation actions that may be lacking for conservation and recovery of a Covered Species, to which the DRECP could contribute as compensation for Covered Activities.

In addition to approach described above, the following considerations should be integrated into the preliminary conservation strategy related to the existing conservation actions component:

# DRAFT

June 30, 2011

*Memorandum*

*Subject: Approach to Structuring the Preliminary Conservation Strategy*

---

- Of the existing conservation actions identified, which actions are appropriate for integration or application within the DRECP conservation strategy?
- Of the existing conservation actions identified, which actions have been or are being implemented or funded?

## ***Biological Goals and Objectives***

As described in the framework-level biological goals (FCSR Section IV.B), biological goals and objectives provide the broad guiding principles (goals) and conservation targets/desired conditions (objectives) for the conservation strategy. These biological goals and objectives are expressed at the landscape, natural community, and species levels. For example, framework Goal 1-2 seeks to “Protect and maintain ecosystem processes so as to maintain ecological functionality.” Under this goal, the objective is to “protect and maintain processes important for...wind (eolian) transport and deposition of sands that maintain dune system.” As such, the preliminary conservation strategy will need to incorporate processes and functions of dune systems, through siting and design measures, reserve design, encroachment limits, or other measures. As part of the preliminary conservation strategy development process, the biological goals and objectives provided in the FCSR will be refined and expanded to address all 50 species on the species list. The refined biological goals and objectives will be incorporated into the preliminary conceptual reserve design and the conservation strategy structure, described below.

## ***Reserve Design***

As described in FCSR Section III.A, the conservation strategy structure will include a network of conservation areas throughout the Plan Area designed and assembled according to a set of guiding principles. The reserve design process will be used to identify areas of high conservation value suitable for inclusion in the DRECP conservation reserve system.

For purposes of the preliminary reserve design, existing protected lands (i.e., the RETI Exclusion Areas) will be considered hardline areas and will serve as the initially defined core habitat areas. Although encroachments within the Exclusion Areas are anticipated as a result of Covered Activities, these encroachments will typically be linear in nature (e.g., transmission line development) and will be subject to a set of DRECP siting and design criteria. Further, conservation activities that may have some level of impact will be allowed in the Exclusion Areas. As noted above, there may also be Exclusion Areas where no Covered Activities, including transmission, are permitted.

# DRAFT

June 30, 2011

*Memorandum*

*Subject: Approach to Structuring the Preliminary Conservation Strategy*

---

In the remainder of the Plan Area outside hardline areas, baseline data, species habitat models, gap analysis, and biological goals and objectives will be integrated to identify a preliminary conceptual reserve design incorporating high biological resource value areas, including landscape habitat linkages, rare or sensitive natural communities, areas necessary for maintaining important ecological processes (e.g., sand or sediment sources), species modeled habitat, important species occurrences (e.g., locations supporting highly endemic plant species), and other important or unique features (e.g., caves, rock outcrop, etc.).

In addition to the approach described above, the following considerations should be integrated into the preliminary conservation strategy related to the preliminary conceptual reserve design component:

- Plan Area-wide reserve design based on the wide range of conservation planning efforts already existing in the DRECP Plan Area over a number of years. These conservation planning efforts are described in the Conservation Plans Summary matrix included in the Framework Conservation Strategy Report, which reviewed 28 existing plans and reports relevant to the Plan Area. The Plan Area-wide reserve design will be a consolidation of existing conservation areas from these plans, as appropriate, including national parks, national refuges, wilderness areas, wildlife management areas, and other conservation areas.
- Application of appropriate automated methods for developing preliminary reserve designs. For example, Marxan, as well as other computer-based algorithms, have been identified as a potential approach to developing an “optimized” reserve design for the DRECP. Appropriate automated reserve modeling options will be recommended and implemented following development of the Preliminary Conservation Strategy and the initial benchmark effects analysis. The species modeling, gap analysis and other work completed as part of the Preliminary Conservation Strategy are important to focus automated reserve modeling efforts. Reserve modeling methods will consider both renewable energy development goals and conservation goals.

Other parallel efforts are also ongoing that will inform the preliminary conceptual reserve design depending on their availability relative to the DRECP planning schedule and their appropriateness, including:

- BLM Rapid Ecoregional Assessment results for the Mojave and Sonoran Deserts
- SC Wildlands California Desert Connectivity Project

# DRAFT

June 30, 2011

*Memorandum*

*Subject: Approach to Structuring the Preliminary Conservation Strategy*

---

- California Department of Fish and Game ACE-II modeling
- The Nature Conservancy Ecoregional Assessments for the Mojave and Sonoran Deserts
- Incorporation of climate change effects into the preliminary reserve design (e.g., accommodation of range shifts and dispersal, and other changes in environmental gradients).
- The role of planning species in the preliminary conceptual reserve design and/or their value as indicators for the monitoring program.
- Incorporation of aerial habitat and major flyways into the preliminary conceptual reserve design.
- Consideration of linkages to areas outside the Plan Area, including the Southern California mountains, the Sierra Nevada Mountains, and desert regions in Nevada, Arizona, and Mexico.

## **Preliminary Conservation Strategy Structure**

The preliminary conservation strategy proposed structure would have the following components:

- *Exclusion (Hardline) Areas.* These areas would be considered core habitat areas, as described above under the reserve design. As noted, these areas are considered to be protected lands from a conservation strategy perspective, but would have some encroachment allowance for effects associated with transmission corridors and conservation actions. The encroachment allowances and siting and design criteria for transmission corridors will be defined for each hardline area. Additionally, each hardline area would have a defined set of allowable conservation actions, which will be developed from the existing management regime and conservation needs of the resources in the hardline area.
- *Criteria (Softline) Areas.* Criteria areas will cover the remainder of the Plan Area outside the Exclusion Areas. Each criteria area will have an area-specific set of encroachment limits designed to meet natural community and/or species-specific conservation targets. The criteria established for each area will be based on the preliminary conceptual reserve design and the other key components described above. Encroachment limits are typically expressed in terms of maximum acreage of impact to each natural community or maximum acreage of impact to each species' modeled habitat. For wind projects and

# DRAFT

June 30, 2011

*Memorandum*

*Subject: Approach to Structuring the Preliminary Conservation Strategy*

---

perhaps transmission projects, alternative metrics for establishing encroachment limits may be employed, such as number of turbines, rotor swept areas, transmission corridor length/design. Strict encroachment limits shall be necessary for wetland communities (e.g., seeps) or narrow endemic plant species. Subareas could be used to organize information for the criteria areas.

- *Conservation Reserve System Assembly Procedures.* This component would describe the process for assembling the DRECP conservation reserve system. As noted in the assumptions, the conservation actions implemented under DRECP would be proportional to the renewable energy and transmission development permitted under the DRECP. The build-out of the conservation reserve system will be dependent on the level of development that occurs under the Plan. When development occurs in a criteria area that requires habitat compensation/mitigation, mitigation ratios and/or fees will be established. The conservation reserve system would be assembled through acquisitions from willing sellers or conservation easements over unprotected lands based on the required mitigation ratios. If determined suitable for the DRECP, a fee-based program could be established that would allow payment of fees to be used to assemble the conservation reserve system. Any fee-based structure and a funding plan will be developed after the Preliminary Conservation Strategy as shown on the DRECP work process flow chart.
- *Conservation Actions.* The following list of conservation actions would be considered for incorporation into the preliminary conservation strategy. These actions may be considered as DRECP-wide actions or specific to a landscape, habitat or species.
  - Avoidance and minimization measures
  - Habitat compensation through acquisition, legal protection, or fee payment
  - Credits for conservation actions on public lands
  - Process or habitat restoration
  - Management and monitoring

# DRAFT

June 30, 2011

*Memorandum*

*Subject: Approach to Structuring the Preliminary Conservation Strategy*

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## **NEXT STEPS**

The following immediate next steps will be conducted to implement this approach:

1. Complete/refine the key components noted above as inputs to the preliminary conservation strategy (i.e., species habitat models, gap analysis, existing conservation actions, biological goals and objectives, and reserve design).
2. Iteratively evaluate the preliminary conservation strategy against the tiered effects analysis results (see Proposed Approach to the DRECP Effects Analysis Memorandum).
3. Refine preliminary conservation strategy approach and structure.